

**PERCEPTIONS OF ADMINISTRATORS IN TEXAS
COLLEGES AND UNIVERSITIES REGARDING
MANPOWER/MARKET STRATEGIES**

**A dissertation
Presented to
the Faculty of the College of Education
The University of Houston**

**In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education**

**by
Mahmood Taherian
March 1981**

DEDICATION

This dissertation is dedicated to my parents, Iran and Ali-Mohammad; to my wife Nahid and son Nima; to my sister Fatema; and to my brothers, Abbass, Nader, Hadi and Reza, for their concern, support, and encouragement.

This dissertation also is dedicated to Mr. Ali Taheri and Mrs. Eftekhar Taheri for continuing support and love throughout this project.

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Deepest thanks and appreciation are extended to my wife Nahid and son Nima. Their patience, understanding, and encouragement during the period dedicated to the doctoral program enabled me to accomplish the task of completing the study.

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Abstract

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Chairperson: Professor Gene Atkinson

The main purpose of this study was to examine the ratings of the Directors of Institutional Research and Development in Texas institutions of higher learning on components of Manpower/Market Strategies (demand assessment, institutional development, market analysis, and market development). The study also examined relationships between institutional variables (control, size, location, enrollment trend, and deviation of enrollment projection) and the Manpower/Market Strategies. An additional purpose of this study was to examine the outcomes of these alternatives in terms of job placement, retention/attrition, enrollment trend, and enrollment of minority groups of students, as perceived by administrators.

The study consisted of a sample of institutions of higher education in Texas (N=120). A modified form of Brazziel's (1978) College Manpower/Market Planning and Development Activities Survey questionnaire was used to determine the emphasis and value institutions place on various developmental activities. Response rate was 68% (n=81). Several analyses comprised the statistical treatment of the data. First, discriminant function analysis was employed to distinguish the characteristics on which the institutions were expected to differ. Second, multiple

regression analysis was applied to allow an examination of a combination of institutional characteristics in predicting each of the planning strategies. Third, Pearson Product-Moment correlations were used to correlate Manpower/Market Strategies and their perceived outcomes.

The results of the analysis revealed that administrators of public institutions were placing higher ratings on the survey of demand assessment and general market studies, and lower ratings on the practical components of institutional development and market development. Program change in modification of the liberal arts core and inclusion of various aspects of career preparation reported by private institutions were generally greater than those reported by public institutions. The ratings on Manpower/Market Strategies by public junior/community colleges were concentrated mostly on demand assessment and market development strategies. In comparison to senior institutions, junior/community colleges were more concerned with development of strategies which help them to recruit more students.

Institutions which place more emphasis on Manpower/Market Strategies generally were those in which actual enrollment was higher than or equal to the enrollment projected by the Coordinating Board, Texas College and University System. In addition, institutions which utilized labor market data extensively had better perceived job placement rates. This study further found that institutions which had placed more emphasis on institutional development strategies were more likely to be those institutions whose student attendance and retention patterns were better than those which placed less emphasis.

Information regarding enrollment trend, college-age youth,

demographic data of population migration, and labor market needs permits decision makers to set priorities and to assess the status of a college or university, and thereby make needed decisions regarding that institution's planning. An increasing number of higher education institutions are becoming acutely aware of the fact that declining enrollment and lower job opportunities for graduates will ultimately have a real impact upon the institutions themselves.

It was recommended that a replication of this study on institutions which have taken action to deal with enrollment and job opportunity problems should be undertaken to seek additional information and to substantiate or refute the conclusions of this study. Additional research was recommended to expand this study to include subjects from additional states and to consider different institutional characteristics (i.e., institutional affluence and student selectivity) in relation to ratings on Manpower/Market Strategies.

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CHAPTER I

INTRODUCTION TO THE STUDY

A major question that will confront most American institutions of higher education over the next decade is how to maintain and improve enrollment under the condition of declining numbers of college-age youth and how to improve employability of graduates in an era of a tight labor market. According to Berry and Allen (1977), the outlook for higher education in the 1980's does not include much hope for a return to the days of abundant resources. In fact, the forecast suggests severe belt tightening and perhaps a restructuring of the higher education "industry" in the near future. As a result of insufficient funding, 78 U.S. private colleges closed their doors, merged, or went under public control during the 1972-75 period (National Council of Independent Colleges and Universities...NCICU, 1975).

In addition to a declining base population of college-age persons and a tight labor market, there are a number of other factors affecting the educational market place, e.g., increased cost due to economic inflation, increased competition between private and state-supported institutions, and shrinking public support. Institutions are now applying or experiencing marketing and manpower management approaches to the administration of higher education institutions to attract more students, prepare students for the job market, and regain educational strength. Today, colleges and universities are at a critical point in their development of a meaningful planning process. Manpower/Market Strategies and

techniques may significantly aid administrators and university planners in designing their future. A report revealing these activities and their outcomes should be most helpful to the administrators coping with this situation.

Statement of the Problem

The educational environment of the "golden era" of the recent past, with abundant resources, enabled institutions to adjust their programs to the needs of society. Today, however, colleges and universities are faced with the new realities of leveling or declining enrollments, fewer 18-year-old youth, slow economic growth, and a general public that is reevaluating its predisposition toward support. According to Burnett (1978), planning practitioners have found the traditional forecasts generate insufficient or inadequate premises for developing effective university strategies. There is an urgent need for administrators to recognize what kinds of alternatives are suited to the needs of their individual institutions to cope with the changed environment.

What policy initiatives can be devised to deal with this situation? Can initiatives be developed that will involve new clientele? Is it possible to increase or maintain enrollment level through the reduction of student attrition? Can policy initiatives be developed to improve marketable skills of college graduates? What are the characteristics of institutions that may affect implementation of policy initiatives?

The purpose of this study was to examine the amount of emphasis and value which institutions of higher education placed on Manpower/Market Strategies in the six-year period 1975-80 and the outcomes of these policy initiatives in terms of job placement, retention/attrition, enrollment trend, and enrollment of minority groups of students. The

analysis also examined the relationships between institutional variables and administrators' selected strategies. The selected variables were control of institution (junior/community college, senior institution), location (urban, rural), size (small, large), control (public, private), enrollment trend (growth, decline), and negative deviation from projected enrollment.

Importance of the Study

According to Litten (1979), institutions of higher education appear to be skeptical about market research planning activities which are designed to reveal and strengthen the relationship between an institution's planning and its consumer needs. He suggests this problem may be due to limited experience, lack of research, or the absence of any formal programs for exchanging information between an institution and its market. Too often, each institution has developed its own conceptual framework, which has failed to provide an adequate basis for planning of programs which are vital to the growth and reputation of the institution in the future.

The knowledge of sound alternatives is, of course, vital in determining the optimal courses of action which should be taken by decision makers. This study provides new insights into the problems and alternatives associated with higher education enrollments in Texas.

Comprehensive planning for higher education in Texas has been elevated to a position of importance and concern since the creation in 1965 of the Coordinating Board, Texas College and University System. In addition, it has become evident, in an era of national retrenchment, that more effective planning methods must be designed, utilized, and implemented if colleges and universities are going to continue their

growth and effectiveness.

Manpower/Market Strategies

The manpower and marketing approach, in this study, was concerned with how to develop a college's educational strengths so that the program will, by itself, attract student support. Variables included in Manpower/Market Strategies (MMS) are presented and discussed in the following sections.

Demand Assessment. In recent years, institutions of higher education have increased their concern for the employability and marketability of their graduates' skills. Numerous studies have been conducted with a view toward understanding manpower management in higher education. Bowen (1974) and Montgomery (1973) suggested that institutions should develop market surveys to ascertain the market demand. They added that assessment of the demand for an institution's graduates will be closely associated with the employability and marketable skills of graduates.

Different types of planning programs of institutions of higher education were examined by Brazziel (1978) in an effort to explain the relationship of the amount of emphasis and value on a Manpower/Market approach to the job placement rate of graduates. He concludes that planning helped the institutions to adjust more accurately to the market demand.

Institutional Development. According to Kotler (1976), institutions should design their products to appeal to their target markets. This means that institutions should initiate new programs as well as strengthen the older programs and also combine or consolidate less productive

programs to meet the identified market demand. Rander et al. (1975) emphasize strongly the need for expanded market research and planning at the institutional level and expanded use of market data in developing internal resources. The adjustment of institutional programs to demands of the market will lead to a better position in the market and consequently may attract more students..

Market Analysis. According to Brazziel (1978), in the context of educational administration, market analysis is composed of several institutional activities which explain not only the characteristics of the students and potential student markets but also explain the institutional position in relation to similar or competitor institutions in the region. Market analysis will help the institution to identify the potential market, its type, location, and size. From an institution's point of view, market analysis will develop knowledge of the characteristics of the potential demand. Therefore, when enrollment decline exists, interest in market analysis should become stronger.

Market Development. Market development strategies are initiated to expand the market. According to Kotler (1976), institutions experiencing decline in enrollment should develop distribution and communication programs that not only contact the new potential student market but also facilitate access to institutional services. Institutional market development is a vital part of an overall marketing strategy which must be combined with general institutional planning. Taken within the large context of college and university management, the strategy of institutional market development is an important activity and represents the institution's efforts to develop and expand the market.

Institutional Characteristics

In order to determine how institutional characteristics affect the Manpower/Market Strategy implementation, it is necessary to establish a meaningful classification of college characteristics. According to Astin (1975), more attention to organizational features is needed because organizational attitudes and environmental dynamics are the major independent variables. These independent variables influence the amount of emphasis and value the organization places on the implementation of the strategies. This study examined the relationships between an institution's characteristics (variables) of size, location, enrollment trend, projected enrollment, control, level, and the implementation of Manpower/Market Strategies. These independent variables are briefly discussed in the following sections.

Size. Little research has been conducted with a view toward understanding the size of the institution as a variable affecting the management of declining growth. Boulding (1974) and Glenny et al. (1976)¹ conclude that larger institutions seem better able to manage decline than smaller ones. In this study, institutions were divided into two size categories: large and small. The size of institutions was assessed as an independent variable which might predict the type of strategies being selected. Each campus of a multicampus institution was treated as an individual institution.

Location. Institutions located in different areas may have different approaches to the declining enrollment problems. Urban areas offer many opportunities as part-time study and better public transportation. Therefore, the institutions located in urban areas may have more

¹Carnegie Council (1976)

opportunities to plan manpower and market strategies than institutions located in urban/suburban or rural areas. In this study, institutions were categorized as urban/suburban or rural.

Level. The classification of the institution by level (junior or senior institution) was used to separate the effect of the level on the amount of emphasis and value the institutions place on planning strategies.

Control. Private institutions were compared with public institutions in relation to the amount of emphasis and value they place on planning in the face of enrollment decline and slow general economic growth.

Enrollment Trend. In essence, the enrollment trend is based upon longitudinal consideration of recorded enrollment data indicating what has been happening in the past, what the present situation reveals, and on the basis of these data, what future trends are likely. The actual enrollment for each institution was collected and the trend of student enrollment for each institution from fall 1975 to fall 1980 was calculated. Institutions which experienced a decline of more than 5% were categorized as declining, and other institutions were classified as stable or growing.

Deviation from Coordinating Board's Projection. The Coordinating Board, Texas College and University System, periodically develops long-range enrollment forecasts for Texas public colleges and universities. They predict that institutions throughout the state will experience different enrollment trends. According to the forecast published in 1978, total enrollment in public senior institutions is expected to increase about 1.5% per year and in public community/junior colleges 1.9% annually through 1987. Institutions which have a negative deviation from the projections may suffer more from the enrollment problem than similar

institutions which experience better than projected growth. Public institutions whose actual enrollments deviated negatively from the Coordinating Board's Projection were separated to test the effects of this deviation on selection of strategies.

Hypotheses:

- H₁. For each Manpower/Market Strategy (MMS) (demand assessment, institutional development, market analysis, and market development), the emphasis and value, as perceived by administrators, will be such that:
- (a) Private institutions are more likely than public institutions to place emphasis and value on MMS;
 - (b) Smaller institutions are more likely than larger institutions to place emphasis and value on MMS;
 - (c) Institutions experiencing negative enrollment deviation from the Coordinating Board's 1978 projections in Texas are more likely to place more emphasis and value on MMS compared to institutions with positive enrollment;
 - (d) Institutions located in rural areas are more likely than urban and suburban institutions to place emphasis and value on MMS;
 - (e) Junior/community colleges are more likely than senior institutions to place emphasis and value on MMS; and
 - (f) Institutions experiencing decline in enrollment (more than 5 percent changed from 1975-80) are more likely than others to place emphasis and value on MMS.
- H₂. Institutions which place more emphasis and value on demand assessment (e.g., utilize labor market data to assess

demand for graduates) are more likely than other institutions to have higher placement rates.

- H₃. Institutions which place more emphasis and value on institutional development (e.g., initiate programs to meet demand) are more likely than other institutions to have lower attrition rates as perceived by respondents.
- H₄. Institutions which place more emphasis and value on market analysis (e.g., use data to project potential student market) are more likely than others to have higher percentage rates of enrollment of ethnic minorities, women, and older students.
- H₅. Institutions which place more emphasis and value on market development (e.g., utilize contacts with potential markets) are less likely than others to have enrollment decline.

Population and Sample

The population for this study consists of Directors of Institutional Research and Planning of 120 postsecondary institutions in the state of Texas. The Directory of the Association of Institutional Research (1979-80) and Texas Higher Education Directory (1978-79) were used to collect the names and titles of the respondents. This study included independent senior plus public junior and senior colleges in the state of Texas as listed by the Coordinating Board, Texas College and University System.

Instrumentation

Brazziel's (1978) Manpower/Market Planning and Development Survey was used to determine the emphasis and value institutions placed on

various developmental activities in the past six years and the outcomes of these activities. This instrument consists of twenty-five statements which were considered valuable by the panel of experts on the subject. The statements are divided into four groups which measure the amount of emphasis and value institutions place on implementation of the alternatives. Each scale provides for ratings from 1 to 7. The Brazziel (1978) study of manpower and market planning indicated that efforts resulted in an increase of 5 to 10% in placement and in enrollment.

To confirm the reliability of Brazziel's Manpower/Market Scale, a pilot test was conducted in May 1980. The purpose of the pilot study was to (a) determine the administrators' opinions and ideas as to the appropriate selection of strategies related to manpower and market development, (b) have participants evaluate the questionnaire developed to elicit the demand assessment, institutional development, market analysis and market development activities, (c) have participants complete the questionnaire, and (d) have participants rank order alternatives.

Careful study of the pilot test responses, comments, and criticisms guided the researcher in making the final instrument. The Coefficient Alpha on the pilot study was high enough to assure the internal consistency and dependability of the instrument (See Table 2, Chapter 3).

Statistical Analysis Procedures

Discriminant function analysis and multiple regression analysis were the statistical approaches used in this study to test the hypothesis H_1 . The significant level was .05.

H_1 was tested from two different perspectives. First, discriminant function analysis was utilized to determine whether or not a linear combination of all dependent variables (manpower/market) can discriminate

or identify whether the institution is public or private, small or large, or located in an urban or rural area. Second, H_1 was tested through the use of multiple regression analysis, which allowed an examination of a combination of institutional characteristics and then predicted each of the planning strategies. To test hypotheses H_2 , H_3 , H_4 , and H_5 , the Pearson Product-Moment correlation was used to determine relationships, if any, between Manpower/Market Strategies (demand assessment, institutional development, market analysis, and market development--the likelihood that an institution places emphasis on MMS) and changes on placement rates, attrition rates, types of students, and enrollment trend.

Limitations

The Manpower/Market strategies selected in this study were limited to those initiatives which deal with manpower/market planning and developmental activities. In this study, there was no intent to show the cost effects of the selected alternatives. The enrollment problem is national in scope, and this study may have national implications. However, interpretation is purposely limited to Texas higher education.

Definition of Terms

For the purpose of clarification, the following terms are defined and used in this study as specified in all discussion, explanation, and identification of data.

Enrollment Headcount--The number of individuals enrolled on the 12th class day of the fall semester. This includes all students who registered, with payment of fees indicating their completion of registration.

Senior Institution--An institution of higher education which confers

advanced degrees and/or bachelor's degrees in a variety of fields.

Junior College--An institution of higher education offering the first two years of college-level work. This category also includes community colleges.

Marketing Strategies--The possible courses of action designed to be used in case of enrollment decline and any other institutional market research and development.

Component Value--Relative worth and real value or utility of identified alternatives. It is the degree of excellence or usefulness of Manpower/Market Strategies as perceived by administrators of higher education on a seven-point Likert scale.

Component Emphasis--The amount of emphasis accorded to selected alternatives on a Likert-type scale.

Size of Institution--The number of students enrolled in the institution is considered the measure of size of the institution. In this study, institutions were categorized as large and small. Institutions with an enrollment equal to or more than 7,000 were considered as large, and others were categorized as small institutions.

Location--Refers to the geographic area served by the institution. The locations of the institutions are categorized into two types. The first type includes institutions which serve rural areas or towns with less than 50,000 population within 20 miles of the population center. The second type includes those institutions which are located in metropolitan areas or in the suburbs of a city with a population of 50,000 or more.

Enrollment Trend--In essence, enrollment trend in this study is based upon a longitudinal consideration of enrollment data indicating what has

been happening in the past, what the present situation reveals, and on the basis of these data, what will likely be the general tendency in the future.

Deviation from Enrollment Projection--The degree to which an institution's enrollment deviated from The Coordinating Board's projections in Texas is considered an important factor affecting the planning of Manpower/Market Strategies. The differences between the projected and the actual enrollment were categorized into three levels: (1) actual enrollment equaled or exceeded the projection; (2) actual enrollment fell short of projection by 0-5%; or (3) actual enrollment fell short of projection more than 5%.

Retention--The act of retaining, the state of being retained. There are three levels at which identification of retention might be carried out: first, a student who leaves college for any reason with a very poor chance of returning to school is classed a dropout; second, a student who interrupts school for a relatively brief period and returns to complete the degree is classed a stopout; and third, a student who transfers to another college is classed a transfer. In this study, administrators rated their institution's retention pattern by estimating changes on the rates of dropout, stopout, and transfer.

Ethnic Minorities--The groups classified according to race, whose membership is less than 50% of the total enrollment.

Organization of the Study

Listed below are the titles of the chapters, with bibliography and appendixes, for this dissertation.

- I. INTRODUCTION TO THE STUDY
 - II. REVIEW OF RELATED LITERATURE
 - III. PROCEDURES AND METHODOLOGY
 - IV. ANALYSIS OF DATA
 - V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS
- REFERENCES
- APPENDIXES

Summary

This chapter has presented an introduction to the study. The significance of the study was presented, the background of the problem was explored, the problem was stated, and its constructs were defined. Additionally, hypotheses were presented, the population and sample were defined, instrumentation was explained, the pilot test was described, data collection and statistical analysis procedures and definition of terms were presented, limitations to the study were given, and chapter headings were listed.

CHAPTER II

REVIEW OF RELATED LITERATURE

Literature on the topics of declining enrollment in higher education and the alternatives to compensate for or accommodate to this phenomenon is of relatively recent origin and varies widely in scope and quality. The newness of declining enrollments and the evident lack of public awareness of this problem until confronted locally may help to explain this fact.

Enrollment Trend in Higher Education

After the mid-1950's, enrollment in U.S. postsecondary institutions increased impressively--at the rate of almost 8 percent per year until 1970. The total number of students in degree-credit courses reached 3.6 million in 1960 and 7.9 million by 1970. The low alternative projection of The National Center for Educational Statistics (NCES) (1977) called for a high of 12.1 million in 1980 and 1981, followed by a steady decrease to a low of 11.2 million in 1985 (Frankel and Harrison, 1977). Glenny (1976) believes that a turning point in college enrollment patterns was 1969, when enrollment rates of youthful males reached a peak and when enrollment rates of youthful females began to level off.

In the 1970-1973 interval, however, although enrollments increased overall, they leveled off or declined disastrously in many segments, and a near static situation developed. The resultant shock to the higher education community was serious.

In projecting for the next 20 years (1980-2000), forecasters have agreed that the size of the college-age population, the most important

factor affecting future college enrollment rate, will decline. According to projections of the NCES, between 1980 and 1990 the decrease in college-age youth will be about 18 percent, with most of the drop (11 percent) during the first half of the decade. By 1985, there will be 1.7 million fewer 18- to 21-year-olds than in 1980; but on the second important factor in determining enrollments--the rate of attendance for the typical college-age group and for older students--forecasters differ widely. According to Centra (1980), although five of the six well-known projections call for annual contractions during the first half of the 1980's, beyond 1985 the picture is more complex.

For example, the Carnegie Council's Projections² (1975) assumed the continuance of the early 1970's trends; thus, enrollments of part-time, older adult, and non-degree-credit students are predicted to increase at a modest rate. The NCES's high alternative projection assumed that by 1985, the proportion of the 18- to 21-year-old male population taking college courses will increase to the high enrollment rate levels of 1970 and 1971 (when the military draft was in operation). The NCES's low alternative projection was based on three assumptions: (a) the proportion of the 18- to 21-year-old male population enrolled as degree-credit undergraduates will continue to drop; (b) the percentage of the 18- to 21-year-old female population enrolled as degree-credit undergraduates will remain constant at the 1975 level through 1985; and (c) for both men and women, the proportion of the 18- to 21-year-old population enrolled as full-time, non-degree-credit students will remain constant at the 1975 level through 1985.

²In "More Than Survival"

Cartter (1976) assumed that the ratio of college enrollment to the 18- to 21-year-old age group would remain constant in the future, resulting in a decline in full-time equivalent enrollment of about 1.8 million students by 1990. He believed, however, that the expanding nondegree enrollments, a higher rate of college attendance by older students, and more stable enrollments in graduate and professional programs should reduce the decline to a half million or so.

The most pessimistic projections are the economic-based models, which presume that a weak job market for college graduates will result in a lower rate of attendance. Froomkin (1976) predicted that between one third and one half of all college graduates, in the 1975-1985 period, will take jobs formerly filled by persons with less education. He suggested that a poor job market and/or poor job security for college graduates could result in high school graduates being less inclined to enroll in colleges.

Dresch (1977) also believes that higher education has overexpanded and that the income gain that graduates can expect from a degree has diminished considerably. He predicts a startling 40% decrease in enrollment during the 1980's. Freeman (1977) took a more drastic view of the job market for college graduates than either Dresch or Froomkin. He believes that the declining enrollment in the future will produce small graduating classes that will eventually shift the labor market from surplus to shortage. Even so, he did not expect that the economic rewards of colleges would be restored to the 1966 level.

In contrast, the most optimistic view of higher education's growth potential is provided by Bowen (1974), who saw the possibility of higher education doubling or tripling in size during the next 20 years as part

of a major social and cultural change in America. Centra (1979), on the other hand, states that there is little evidence to date to support this hopeful view.

In 1970, the Carnegie Commission on Higher Education and the Ford Foundation jointly sponsored a study of the financial conditions of colleges and universities. They did so in response to the request of several college and university presidents who were concerned about the downward direction of their own campuses. The results of the study were published in March 1971 in a Carnegie Commission general report, "The New Depression in Higher Education."³ This early investigation tries to identify and explain the phenomenon of declining enrollment in the early 1970's. The Commission's report further suggests that unless a sharp turnaround occurs in the rate of college attendance, higher education--as presently structured and defined--will require continuing and substantial adjustment during the remainder of this century.

It is important to consider factors contributing to the recent enrollment decline in higher education. In a 1973 study, Trow showed how a cluster of problems rather than individual problems is associated with transition from one phase of growth to another. He believes the transition from mass to universal access began to produce signs of difficulty in the late 1960's. The labor market began to show signs that it could not absorb all the college graduates as easily as it could before, that the growth of institutional income was no longer keeping pace with expenditure growth, and that the enlarging cost-income gap in higher education

³This report was published as part of the Carnegie Commission's series, 1971.

was serious enough to be called a "New Depression."

Many analysts, such as Dresch (1975), Freeman (1975), Cartter (1976), and others, have suggested that the United States over the next 20 years or more will have a surplus of college-educated talent rather than a shortage. According to Millett (1977), shortages of educated talent in the 1980's are likely in only four general fields: the administrative sciences, the engineering sciences, the health sciences, and the information systems analysis sciences.

A stabilized labor force will be a major social discontinuity after the experience of the years from 1945 to 1975 and probably will have a major impact on higher education (Millett, 1977). It has been generally assumed that enrollment in higher education responds to the general employment demand for educated talent. If this assumption is correct, in the next 20 years enrollments will probably decline more than the number of 18-year-olds will. According to Parker (1977), if this assumption is incorrect, then a fairly constant proportion of the college-age group might continue to enroll, while the competition for employment intensifies.

In these circumstances, how best can public and private colleges and universities plan and provide the required programs, services, and facilities for education, research, and community service? Huckfeldt (1972) pointed out that the changes in higher education will permit institutions to design and implement better planning and management techniques.

According to Millett (1977), in the 1970's higher education has been trying but largely failing to articulate a new mission in an age of discontinuity. Eckaus (1973) believes that it is unlikely that higher education's role in the American economy can be substantially altered; he

suggests that the higher education role will more likely continue to be of primary importance in the future. He adds that the supply of educated talent may temporarily be in surplus, but the need for educated talent has not ended.

According to Berry et al. (1977), "the time is now for leaders of colleges and universities to consciously and deliberately venture forth from their traditionally inward orientation and attempt to identify what responses should be offered to their institution's key public to warrant their support." It is time now for higher education to become more interested in the practice of marketing.

Marketing Approach

An institution's investment in marketing will result in improved relationships between the institution and the key public with which it interacts (Berry, 1977).

Many researchers propose that marketing planning in the near future will become a major concern of higher education administrators. The private colleges in particular and other types of institutions in general have gained a heightened awareness of the need to develop strategies in order to assure their survival.

According to Shaffer (1978), in the face of nearly certain declining enrollments in higher education, especially among four-year institutions and universities, administrators have realized that enrollment decreases can be restored by greater institutional involvement in marketing. Doerman (1976) suggests that by paying greater attention to education which meets the needs and desires of its consumers, institutions of higher education will be able to achieve fiscal stability and retain their satisfactory

enrollment. He believes, however, that the attainment of such goals will not occur without hard work, nor will institutions attempting to increase their involvement in marketing be able to do so without significant preparation and understanding of marketing concepts and strategies.

Effective marketing, according to Berry and Allen (1977), is very much due to an understanding of and commitment to the marketing philosophy, normally referred to as the marketing "concept."

The marketing concept as adapted to higher education means that a college or university exists to provide satisfaction to external and internal constituents (or segments thereof) who can be instrumental in providing the institution with the support and resources needed for survival and development. (p. 26)

A new approach to attracting students to institutions, based on marketing strategies, is growing in the higher education community and is becoming more refined in its philosophy and its techniques.

Kotler (1976) comments on the needs of the public sector as they pertain to marketing:

Organizational unresponsiveness ultimately engenders client apathy or hostility that throws the organization into a crisis. Colleges find that they cannot attract enough students. Public school administrators cannot attract enough citizen support to pass a bond referendum. . .

At this point these organizations are finally ready to re-examine their mission and client relations. As they do so, some begin to recognize their problems as marketing problems. They look at business firms and their effectiveness in using marketing to develop demand for their output. They begin to conjecture that the solution to their problems may lie in market orientation. . .

Hopefully, at this point the college begins to grasp the differences between a selling approach and a marketing approach. It begins to realize that it must modify its product as well as its promotion. It begins to ask proper questions: What is happening in the marketing environment? How is the college seen by different groups? What are its marketing opportunities? How should it position itself among colleges? How can it

communicate to the inside and outside publics a clear identity and mission? And, how can it organize to do more effective marketing? (p. 494)

One aspect of the marketing process implied by the Kotler article but not directly discussed is the institution's ability to adjust to the changed environment. The relevant issue is not whether or not marketing should be used but whether it will be used well or poorly. Marketing is not a set of techniques and approaches which can be applied haphazardly. There is a definite role for marketing techniques in college and university administration, and this role must be prescribed within the larger structure of a school's long-range goals and objectives.

In practice, according to Hopkins (1974) and Parker (1977), the marketing techniques most visibly borrowed by educational administrators have been in the area of promotion, notably personal selling and advertising. Manifestation of this process can be seen in the increasing number of direct mailings of university brochures and catalogues, coupled with a significant increase in mass media advertising. According to Hugstad (1975), this is an example of the direct transfer of marketing technology and activities without careful distinction between the need to more effectively inform the public of university programs and sales campaigns aimed primarily at finding the customer for the empty classroom seats. Hugstad concludes, therefore, that "conscious decisions are needed regarding which of these functions should be performed in an educational environment."

Measuring the marketing effort of institutions is quite common in higher education. Work in this area seems most concerned with expansion of recruitment to enroll additional students, while a real marketing device should satisfy the institutional mission and student needs.

Manpower Approach

Institutions involved in marketing become more aware of the usefulness of the manpower approach in assessing their traditional programs because of economic motives and the employability of their students in the future labor market. This awareness caused "occupational" manpower programs to become stronger in the higher education community. According to Norris et al. (1978), "for years traditional education has shunned occupational offerings as inappropriate to its mission." Now, however, educational administrators consider building bridges linking manpower needs to occupational and higher education.

There are several arguments about the propriety of manpower application to postsecondary education. Wilson and Wood (1975) and Freeman and Breneman (1974) report that there are some limitations in the manpower approach. They believe that preparation for employment has not been the students' primary motivation in attending college and that vocationalism decreases with exposure to higher education; that the career choices of young people are highly unstable; that occupational information has been both sketchy and inaccurate; and that colleges and universities have not been very responsive in their course and career offerings. The needs of students and the changing job market have not been addressed. It could be argued in rebuttal that much of this line of reasoning is based on data from periods in which economic conditions were more favorable than they are today.

Norris et al. (1978) suggested that if the needs of planners are to be met, in-depth research of present and future manpower requirements is necessary. Administrators should rely heavily upon research describing the labor market implications of varying levels of educational attainment.

Research has demonstrated that a distinct, positive relationship exists between level of educational attainment and labor market experience (Carnegie Commission General Report, 1971).

Planners, according to Bowen (1973), should become more aware of employer needs in the health, technology, and business sectors of the American economy. This effort will help to better guide students' career direction to the market place.

Manpower/Market Strategies

Before colleges determine ways to improve their admissions recruitment programs, they must get involved in market and manpower research. According to Brazziel (1978), basic to this research is the need to determine what kind of students the school is attracting and what the market demand for the graduates is. Then, after the student market and market demand are known, research on demand assessment, institutional development, market analysis, and market development become major concerns of administrators.

These Manpower/Market Strategies (MMS) are developing during a period when institutions have become more consumer oriented and students are demanding greater specificity from institutions about their educational programs and their ability to satisfy students' needs.

Demand Assessment

Institutions are becoming more concerned about the employability of their graduates. Much research has been conducted with a view toward understanding manpower/market management in higher education. According to Bowen (1973), Montgomery (1973), and Kotler (1976), institutions should develop market surveys to ascertain the market demand.

Brazziel (1978) examined the planning programs of different types of institutions of higher education, seeking relationships between the emphasis institutions placed on the Manpower/Market Strategy and their job placement rate. For example, the University of Oregon's Career Information System, studied by Brazziel, has tried to bring college and university instruction closer to labor market needs by providing labor market information to students and to program planners at state colleges and universities. This planning procedure helped the institutions to adjust more accurately to the market demand and to have a higher job placement rate than similar institutions in the area.

At St. Cloud State University of Minnesota, Brazziel (1978) found that all programs proposed by colleges and universities in the state system faced comprehensive review of projected supply and demand data for the graduates. The market data were used not only to justify proposed programs but also to adjust existing programs. The examples cited are representative of numerous planning efforts which institutions may select toward adjustment to the labor market.

Institutions desiring a better adjustment to students' preferences need to conduct surveys to assess demand for their graduates of various programs locally as well as in the state. Some institutions cite evidence which illustrates demand for graduates with the training that a new program would provide. This may include information on possible placement based on evidence of the needs of future employers. The demand for an institution's graduates is closely associated with the employability and marketable skills of its graduates (Brazziel, 1978). Brazziel also points out that demand assessment surveys will determine the actual demands of the market for graduates.

Through market surveys, institutions will be better equipped to recognize in what areas their concern should be allocated. With such information, administrators can decide what new programs should be developed or what existing programs should be reevaluated.

Demand assessment surveys may be conducted to determine the actual demands of the market for college graduates. Career counseling and development centers may supply labor market data to help students assess the market demand and to plan their majors. It was anticipated that the institutions which place more emphasis and value on demand assessment are more likely than others to have a better job placement rate.

Institutional Development

Rander et al. (1975) emphasized the need to expand market research and planning at the institutional level and to use the data in improving the institution's programs. Berry et al. (1977) and Brazziel (1978) suggested plans which enhance the possibility of institutional involvement in developmental activities. These plans include: (a) developing the institution's capacity for carrying out a manpower market program, including faculty and staff orientation and training; (b) coordinating and controlling all media communication within the institution and between the institution and its external public, including bulletins, brochures, newsletter, magazines, and press releases; (c) providing support services to administrative units elsewhere in the institution pertaining to the development of new academic programs and services--e.g., modifying the common liberal arts core and technical aid in drafting new program proposals; and (d) support for consumer interest in all plans for institutional development--e.g., specific and adequate information on the college educational programs and its student body, clear and comprehensive

information on placement activities, and complete details on financial aid programs.

Faculty and staff participation affects the program implementation. Student attrition is a factor in declining enrollment. Since faculty and staff play a major role in student attrition (Brazziel, 1978), administrators who communicate manpower/market plans and decisions with the faculty and staff will have a better chance to keep their own students at the university (increase of student retention).

Perhaps the simplest approach to helping the enrollment in higher education is to provide products and services that affect the retention and attendance patterns of the students. Institutional facilities, educational programs, and characteristics, according to Astin (1975), affect student retention and attendance patterns. The increased chance of dropping out or transferring that occurs in institutions may be attributed to the lack of counseling services or programs which are not adjusted to the job market. As Brazziel (1978) suggests, procedures such as institutional involvement in student counseling, expanding internships, expanding operations of the placement office, and initiation of new programs in health and business are positively associated with retention.

Dropouts, stopouts, and transfers influence enrollment in higher education. Several researchers propose that there are close relationships between student attrition and the type of institution. According to Astin (1975), public and private two-year institutions and community colleges are more likely to have a lower retention and attendance pattern, while private four-year and highly selective institutions are more likely to have a higher retention and attendance pattern.

Astin (1975) suggests that classification of students as dropouts is

temporary because any dropout can, in theory, go back to college to complete the degree. Astin believes, in addition, that no definition can be wholly satisfactory. One approach introduced by Astin was to define two other categories of students: "stopouts," who leave college but intend to return to complete their degrees; and "persisters," defined as anyone who completed a baccalaureate degree within four years or who is still enrolled four years after entering college. All other students are considered "dropouts." Transfer students are those transferring to other institutions for completion of their degrees. Since stopouts, dropouts, and transfers are related to students' persistence (retention and attendance), reducing their incidence can improve enrollment in higher education.

In recent years, as a result of the orientation of administrators toward an institution's key public, "student consumerism" has become an active movement. According to Norris (1978), advocates of student consumerism point out that the student, because of his investment of finances, time, and personal commitment, is the prime consumer of post-secondary education. Consequently, as a consumer the student merits fair treatment. His relationship with the college begins with the recruitment and admission process, during which period the student needs adequate information that will enhance his ability to make satisfying educational choices. Viewed in this light, student consumerism is in harmony with the new manpower/market concepts. Both the institution and the student have an interest in assuring a successful match between the student's needs and abilities and the institution's capabilities. In the long run, this will help to establish a better position in the market and consequently attract more students. It appears that institutions which place more emphasis and value on implementation of the strategies and

programs, which help to better equip students for the labor market, may be more likely than others to have a lower attrition rate (higher retention and attendance pattern).

Market Analysis

According to Litten (1976), market research has strongly penetrated the world of college and university recruiting; and market research, which goes beyond the traditional enrollment flow analysis and projection, is increasingly being conducted by institutions.

Brazziel (1978) believes that market analysis for colleges and universities should explore not only the characteristics of the students and the potential student market but should also explore the institution's position in relation to similar or competitor institutions in the region. Kotler (1975) provides an extensive discussion of market structure and position analysis. He concludes that the identification of market segments and the analysis of market structure and institutional position will enable institutions to adopt better marketing strategies. According to Litten (1979), market analysis in higher education should not only seek to produce research on consumer attitudes and perceptions and on market structures which help in defining the content of marketing strategies, but it should also indicate how these consumer and market characteristics relate and are likely to relate to relevant market behavior.

Early application of segmentation principles in higher education marketing occurred when Jewett (1971) identified segments in the high school student market. He estimated segment, size, and the share of the market achieved by Ohio Wesleyan in each segment of the market by financial need, sex, and verbal aptitude. A recruitment planning model for the school, based on numerical estimates of segment size--actual and

projected into the future--and projections of a desirable mix among the segments in the school's student body was then used to suggest the scope of recruitment efforts needed. In a similar approach, Bassin (1975) defined segments in the market of Shippensburg State College and then estimated price elasticity of demand within each of the segments. Stevens (1977) also reported market segment analysis--denominational and non-denominational students in the market of a denominational college--and reported that attitudinal/perceptual behavior of the student market correlates with matriculation in these two student segments.

Analysis of institutional position (how a student perceives an institution) has been reported by several authors. Cook, Krampf, and Shimp (1977) obtained similarity ratings for seven state universities. They used a multidimensional scaling analysis to determine the structure of the market. Institutional positioning, according to Leister et al. (1976), reflects both the most significant competition as well as the range of education product offerings available to potential purchasers in the regional market place. The concept of position was defined by Kotler (1976) as "the perceptions of consumers as to a given product's relationships to competing products in terms of those product attributes or characteristics which are important to the consumers in their product evaluation and selection."

Leister and his colleagues (1975, 1976) have reported the most extensive studies of market structure and institutional position. Although they worked with a number of small samples from within and outside of Pacific Lutheran University (PLU), their analysis of the samples considerably advanced the practice of higher education market analysis. Leister concludes that "the methodology of market position provides

important clues to understanding an increasingly complex market place."

Leister and his colleagues deal with the issue of market structure in relation to specific market segments, but their segments often come close to comprising distinctive markets. For example, in MacLachlan and Leister (1975), comparisons are made between a sample of League of Women Voters (N = 30) and a sample of Pacific Lutheran University students (N = 64). In Leister and MacLachlan (1976), specific reference is made to community college students as an example of "a segment of the market that is worthwhile to address separately from the rest of the market" (p. 664). Comparison is then made between the market structure and preferences of students enrolled at one community college and transfer students from community colleges who were already enrolled at Pacific Lutheran University. In general, more similarities across "segments" were found in market structure than in segments which rated the institutional quality.

According to Brazziel (1978), market analysis is comprised of several interrelated activities which explain not only the institutional position in relation to similar or competitor institutions in the region but also explain the characteristics of the students and potential student market.

Adults, women, and minorities are frequently mentioned as potential new markets and as groups that could help alleviate the projected decline in enrollment in the 1980's. Market analysis for higher education should research this area to find where the market is, who should be included, how large the market is, and what its characteristics are (Kotler, 1976).

Market analysis will help the institution to avoid making decisions which are not relevant to market demand. After colleges conduct surveys

to ascertain market position and also conduct market segmentation analysis to identify characteristics and needs of potential student markets in the area, then the decisions relating to marketing can be properly made. In some institutions (upper division), locating the potential market among older students is the most important part of their marketing plan because the majority of their students are older students.

Therefore, it appears that institutions which place more value and emphasis on market analysis may be more likely than others to have a higher rate of enrollment of ethnic minorities, women, and older students.

Market Development

Market development strategies are related to policies which will expand the market. According to Kotler (1976), institutions should develop distribution and communication programs that not only contact the potential new student but that also facilitate access to institutional services.

Market development will follow market analysis to assist the admissions staff to contact the different segments of the market (e.g., older persons, ethnic minorities, and women). According to Brazziel (1978), market development focuses not only on new markets but also will emphasize student programs and services that will cope with the labor market and that will reach out to students to apprise them of the availability and effectiveness of such a program. This general movement is seen in a large number of institutional planning preferences in recent years (Brazziel, 1978). Manifestation of this movement can be seen from the emphasis which institutions place on the program brochures and manpower information in their marketing efforts.

In market development strategies, information plays an important role for prospective students. Specific and adequate information should

be provided to establish a better base for student choice. Stark (1976) severely criticized college catalogs:

College catalogs describe the characteristics of the student body and the college environment in general terms carefully chosen to convey only positive impressions. . . . Information about the instructional process and financial matters is more elusive. Data on teaching effectiveness are usually published only when gathered by students themselves, usually in a nonsystematic way. (p. 62)

Dissatisfaction with such information has given rise to new efforts to discover and to make available to students the kinds of information they need for a proper career choice.

There is little question that the application of market development strategies to the management of higher education is a necessary reality and an opportunity for growth and survival, particularly for small liberal arts colleges. Recent literature reveals that institutional market development is vital and must be combined with general institutional planning. According to Kinnick (1975), marketing management is an effort in the development of new markets.

According to the studies cited in higher education market development, some institutions are trying to expand their services over time (evening) and over space (off-campus classes) to satisfy a larger student market. Consequently, it appears that institutions which place more value and emphasis on market development may be more likely than others to have improved enrollment trends.

Institutional Characteristics

Some types of colleges and universities are expected to have better enrollment records than other types of institutions. According to Centra (1979), special circumstances surrounding each institution must be

considered as factors affecting student enrollment trends. For example, public four-year institutions and community colleges which are located in urban areas are expected to do better than other types of institutions.

In this study, organizational characteristics are treated as important factors affecting the planning for Manpower/Market Strategies. According to Astin (1975), more attention to organizational features in the process of change is needed because organizational attitude and environmental dynamics are the major independent variables. In order to determine how institutional characteristics affect responses to declining enrollment, it is necessary to establish a meaningful classification of college characteristics.

Glenny et al. (1976), investigating the effect of enrollment decline on different institutions, found that institutions which are predominantly black, for women only, located in small towns or rural areas (if public) or in suburbs or downtown (if private), and those which have essentially open admission and have lost enrollment from 1968 to 1974, are more likely to be affected by enrollment decline and consequently have a higher risk of being forced to close, to merge, or to consolidate.

Nash (1973) in a study entitled "University and the City" found that size and public control affected decisions related to change. He concluded that the size of the institution was a major determinant of involvement in change. The size of institutions correlated with tendency to change. The larger institutions scored considerably higher than small institutions, and public institutions were more likely to score higher than were private institutions in tendency to change.

According to Astin (1965), the number of specific variables available for distinguishing among higher education institutions is great.

Obviously, to use all possible variables would be unwieldy, and the results would be difficult to present in a meaningful way. He conducted a study to reduce many of these variables to a smaller number of general institutional characteristics by means of factor analysis. He collected data on 33 characteristics and conducted a study on a sample of 335 institutions. He concluded that the four main dimensions of institutions which affect policies are affluence (wealth or prestige), size, control, and masculinity (percentage of male). It is clear from Astin's study that these four factors account for many of the known differences among institutions of higher education. He believes that ability of the institutions to make adjustment in response to declining enrollment, new opportunities, and competitive pressures is significantly related to these institutional characteristics. Some institutions are in a better position to respond to certain new situations than others.

This review of the literature will be limited to the following six institutional characteristics. These variables were selected to determine if different types of institutions differ in planning strategies to counter-act enrollment.

Control

A survey conducted by Glenny et al. (1976) revealed that two-thirds of the institutions which they surveyed laid extensive emphasis on active recruitment of students in 1974. The private institutions appeared to lay more emphasis on the recruitment of students than public institutions. The apparent reason seems to be that the private colleges rely heavily on tuition and fees to cover their cost of operation, while public institutions, on the other hand, (a) are the focus of political pressure, (b) have a mandate to serve the entire population, and (c) receive heavy

government subsidies. According to Glenny et al. (1976), for private institutions, competitive status is determined partly by tuition differentials with public institutions and partly by the number of such public institutions within close proximity. Public institutions face competition from other public institutions, most recently the increasingly active vocational-technical institutions. Glenny et al. (1976) suggest that no one category of institution is shielded from competition, but on balance, it appears that public community colleges, highly selective liberal arts colleges, and universities are, as general categories, less likely to be adversely affected by competitive pressures than are the institutions in the other categories.

In the study by the Carnegie Foundation for Advancement of Teaching (1975), the authors indicated that "except for public doctoral-granting institutions, about the same (or smaller) fraction of public institutions expect to increase enrollment by changing undergraduate admission standards in the future as in the past." They added that modified admission standards at the undergraduate level are positively associated with the increased emphasis in recruitment of adults, transfer, traditional students, early admissions from high school, and ethnic minorities. Therefore, according to these observations, it appears that public colleges and universities have a better chance to recruit students than the private institutions.

Recognizing that generalizations about types of institutions have to be qualified by the special circumstances surrounding each individual institution, McPherson (1978) doubted that the more favorable position of public over private colleges will necessarily continue in a time of enrollment decline and retrenchment. Nevertheless, after analyzing enrollment trend, McPherson conceded that the less selective private liberal

arts colleges are most vulnerable to public competition, and that even a substantial portion of the more selective colleges may be vulnerable as well. In Froomkin's (1976) view, the private colleges affected most drastically by enrollment declines will be those having little claim to academic distinction; they will be small, probably sectarian, and will recruit students from a single state or area. Minter and Bowen (1977, 1978) found that eight out of 30 less selective private liberal arts colleges in their national sample were in a weak financial condition in 1976; in 1977, three-fourths of the group were losing students.

In analyzing public versus private competition for students, McPherson (1978) and Bowen (1974) point out that the tuition gap has not changed dramatically relative to income in the past decade or two. Yet, as McPherson (1978) points out, the cost of private higher education is rising with inflation, and parents may be less willing to pay this higher cost, even though they may be able to afford it. McPherson cites evidence of a decline in the proportion of middle-class students in private higher education, due in part to the increasing difficulty of qualifying for financial aid. Spies (1978) points out that the relatively high cost of selective institutions has made them less accessible to middle-income as well as low-income students.

Size

Another important factor in determining institutional involvement in manpower market development is the size of the institution. Will the size affect the institutional decisions related to implementation of the Manpower Market Strategies? The work of Baldrige, Curtis, Ecker, and Riley (1973, 1977) and that of Blau (1973) takes issue with arguments that portray large institutional size as an educational villain. Blau's

The Organization of Academic Work (1973) is, to date, the most comprehensive investigation of the relationships between institutional size and other important variables in the study of higher education. The book analyzes data gathered in the mid-1960's from an elite sample of 115 four-year colleges and universities.

Blau uses the total number of faculty members as the primary indicator of institutional size. Using correlation and multiple regression techniques, he argues that size affects nearly all other institutional characteristics, influencing these directly and/or indirectly. He finds that when all relevant variables are controlled, size has "direct effect" on 19 of 28 dependent variables.

If size is to become an important variable, then it is appropriate to see what effect size has on decisions related to implementation of Manpower/Market Strategies to ascertain whether it is size or some other factor, such as level, type, location, etc., which dictates the amount of emphasis and value on MMS.

In other studies of size of an institution as a variable affecting planning related to enrollment decline, Boulding (1974) and the Carnegie Council (1976) concluded that larger institutions seem better able to manage decline than smaller ones. Other things being equal, larger organizations enjoy more budgetary flexibility, more room to maneuver, and they often have greater influence on state policy. While it is true that smaller organizations can mobilize total effort more readily, they cannot make cuts in their operations and programs with as little overall damage as can larger organizations. This is because their effort is more unitary and less a composite of relatively unrelated parts; once a plan is selected, it affects all parts. Therefore, it appears that smaller

institutions may be more committed to acquiring management tools for recruitment than larger institutions.

Level

From 1968 to 1973, there were noticeable shifts in the types of institutions students were choosing to attend. For example, in Texas, according to the Coordinating Board study paper 27 (1978), enrollment at public senior colleges in 1968 made up 56.7% of the total state enrollment for that year; by 1973, their share dropped to 48.9%; and in 1977, about 45% of all the students enrolled in Texas were attending public senior colleges. Enrollment in relation to the level of institutions in Texas indicates that in 1970, junior and community college institutions constituted slightly more than half the total enrollment. By 1973, however, those institutions' share had decreased to 44%, with the upper division and doctoral enrollment being almost constant and master's level showing a substantial gain. The Coordinating Board report indicated that this general pattern continued through 1977, and to a lesser extent is expected to prevail through 1987.

Apparently, four-year institutions which have extremely limited doctoral programs and two-year institutions may be more likely than others to place emphasis and value on strategies to control enrollment decline. The Carnegie Council considered several factors that would likely affect enrollment levels differently among the various categories of institutions. The first set of factors was external to the institutions themselves; it included the shrinking 18- to 21-year-old pool, the declining market for teachers, the increasing number of part-time students of all ages, and the rising state support for private higher education. More part-time students, the Council estimated, will be of benefit to community colleges in particular, while the

declining market for teachers will negatively affect liberal arts colleges and comprehensive colleges and universities (large institutions that offer bachelor's and master's degrees--the state colleges are a major part of this group). Another external factor is the increased emphasis on vocational and professional studies, which will benefit comprehensive colleges and universities but hurt the liberal arts colleges. Glenny et al. (1976) reported that just half the institutions he surveyed recently had increased enrollment in the vocational and professional areas.

Community colleges located within easy commuting distance of four-year institutions are likely to lose some students from their associate in arts and associate in science programs (Carnegie Council, 1976). In spite of this predicted trend, however, community colleges are in a unique position to combine liberal arts and career training. The four-year institutions have the advantage of flexibility of large size and the growing strength of strong professional schools. Because much of their work is specialized, however, four-year institutions experience severe adjustment problems at a time of declining growth. Universities may experience the most severe decline problem during this period of adjustment--according to Cartter (1976), young scholars with long years of preparation for the Ph.D. face bleak labor market positions, and highly specialized scholars will discover that their specialized fields may no longer require their services.

Location

According to Glenny (1976), judgments about the capacity of institutions to adjust to new conditions must be modified further to reflect enrollment shifts as a function of geographic location. Institutions located in rural areas face a serious enrollment problem, due to the

migration of college-age students to urban areas and limited opportunities to develop new markets. On the other hand, an urban location enables an institution to respond to the demand for part-time study and a commuter population that can more easily cut college expenses by living at home. The newly enlarged demand for part-time study is primarily an urban phenomenon. Urban areas offer many opportunities to combine work and study and have better public transportation. Thus, urban private colleges can compete effectively in this market with public residential institutions but appear to be having difficulty competing with public community colleges. According to the Carnegie Council (1976), cities also seem relatively more attractive to full-time students than they were formerly. Universities, comprehensive colleges, and public community colleges should, on balance, benefit most from the operation of this factor, since more of them are in urban locations. Therefore, institutions located in urban and suburban areas may be in a better position to recruit students than institutions in rural areas.

Enrollment Trend

In essence, enrollment trend is based upon a longitudinal consideration of recorded enrollment data indicating what has been happening in the past, what the present situation reveals and, on the basis of these data, what will be likely to happen to enrollment in the future. Although such estimates are tentative, these trends have important implications for institutional officials who must find ways to recruit students. Institutions which experienced decline in enrollment trend may be those institutions which place low emphasis and value in planning for market development.

Coordinating Board's Projections

The Coordinating Board, Texas College and University System, periodically develops long-range enrollment forecasts for Texas public colleges and universities. The Board, on March 10, 1978, adopted 10-year projections for the individual public senior colleges, and its staff later developed additional statewide forecasts for public community colleges and junior and senior institutions in the private sector.

The predict that institutions throughout the state will experience different enrollment trends but that total public senior college enrollment is expected to increase about 1.5% per year through 1987, for a 10-year growth of 15.36%.

Public community/junior colleges' enrollment is projected to grow approximately 1.9% annually, resulting in an increase of 19.6% in the next 10 years (1978-1988). Independent senior institutions, while continuing to increase their enrollment at an average annual rate of about 1.1%, are not likely to show as much gain as the public senior colleges and universities. Private junior colleges are expected to continue to decline in enrollment.

Projected trends, of course, are not equally distributed among one type of institution. Some institutions which have a negative deviation from the late seventies' projection will suffer from the enrollment problem, while other similar institutions will continue to grow.

Therefore, the institutions experiencing negative deviation from the late seventies' projections may place more emphasis and value on recruitment strategies than those experiencing positive or stable enrollment trends.

Although the six factors above are related to categories of

institutions, they relate much more precisely to the situation of individual institutions. Thus, they constitute primarily a check list for institutions in evaluating their future; and they also have an impact on the share of enrollment among types through their impact on single institutions.

What administrators can do to plan for enrollment shifts in the coming years is a major question for almost all higher education institutions throughout the United States. Brazziel (1978), for example, sought an answer to these questions: what policy initiatives can best be devised to deal with declining enrollment? Can initiatives be developed that will attract new clientele? He concluded that the problems are soluble and that systematic policies can be developed to deal with them. His study shows that efforts to attract new students have resulted in an increase of 5 to 10% in enrollment.

In spite of all the problems projected for the future, many researchers predict that the vast majority of institutions will survive and will adjust themselves to the changed environment. Institutions which practice marketing strategies should make careful decisions to implement a concept of marketing which goes beyond the idea of selling a particular college education. The administrators need to develop a Manpower/Market Strategy that encompasses elements discussed in this chapter (demand assessment, institutional development, market analysis, and market development). To this end, the manpower/market approach should be concerned with how to produce a college's educational strength so that the program will, by itself, attract student support.

Summary

The literature reviewed indicates a variety of conclusions and considerations regarding the use of Manpower/Market Strategies in college and

university planning. First, enrollment projections for the next decade were discussed; second, marketing and manpower approaches to higher education were presented; third, independent variables (institutional characteristics) were viewed as an effective predictor of institutional involvement in the use of MMS.

CHAPTER III

PROCEDURES AND METHODOLOGY

This chapter defines the population and briefly describes the process of instrument development. Also included is a discussion of critical issues of the reliability and the validity of the instrument. The validity and reliability of Brazziel's Manpower/Market Planning and Developmental Activities are evaluated. Next, data collection is discussed and the methods and procedures for statistical analysis of the data are outlined.

Population and Sample

The population of this study consisted of Directors of Institutional Research and Planning at 120 postsecondary institutions in the state of Texas. The Directory of the Association for Institutional Research (1979-1980) and The Texas Higher Education Directory (1979-1980) were used to collect the names of the respondents. This study included all private senior institutions and public junior and senior colleges and universities in the state of Texas as listed by the Coordinating Board, Texas College and University System, but excluded professional, theological, and medical schools. Table 1 shows the sample and rate of responses, by the types of institutions.

A total of 81 institutions participated in this study, which represents 68% of the selected institutions in the state of Texas. The breakdown of campuses represented is as follows: 26 are public senior institutions, 18 are independent senior institutions, and 37 are public

junior and community colleges. Figure 1 shows the location of each institution in the state of Texas.

Table 1
Sample and Rate of Responses by
Type of Institution

Type of Institution	Sample	Responding Institutions	
		Number	% of Response
Public Senior Institution	36	26	69
Independent Senior Institution	27	18	60
Public Junior & Community College	57	37	71
Total	120	81	68

Instrumentation

Brazziel's (1978) survey of college Manpower/Market Planning and Development Activities Survey was used to determine the emphasis and value institutions placed on various developmental activities in the past six years (1975-80) and the outcomes of these activities. The manpower market alternatives were selected on the basis of reviewing the recent literature on enrollment decline and manpower planning in higher education and Brazziel's work on a one-year period of observation of the different types of institutions of higher education across the United States. Of all the components of planning factors identified by Brazziel, the following strategies (factors) were believed to exert the greatest influence on enrollment trends and employability of an institution's graduates.

Demand Assessment (DA): This scale measures efforts to collect data to assess market demand. In recent years, institutions have increased their concern for employability and marketability of their graduates'

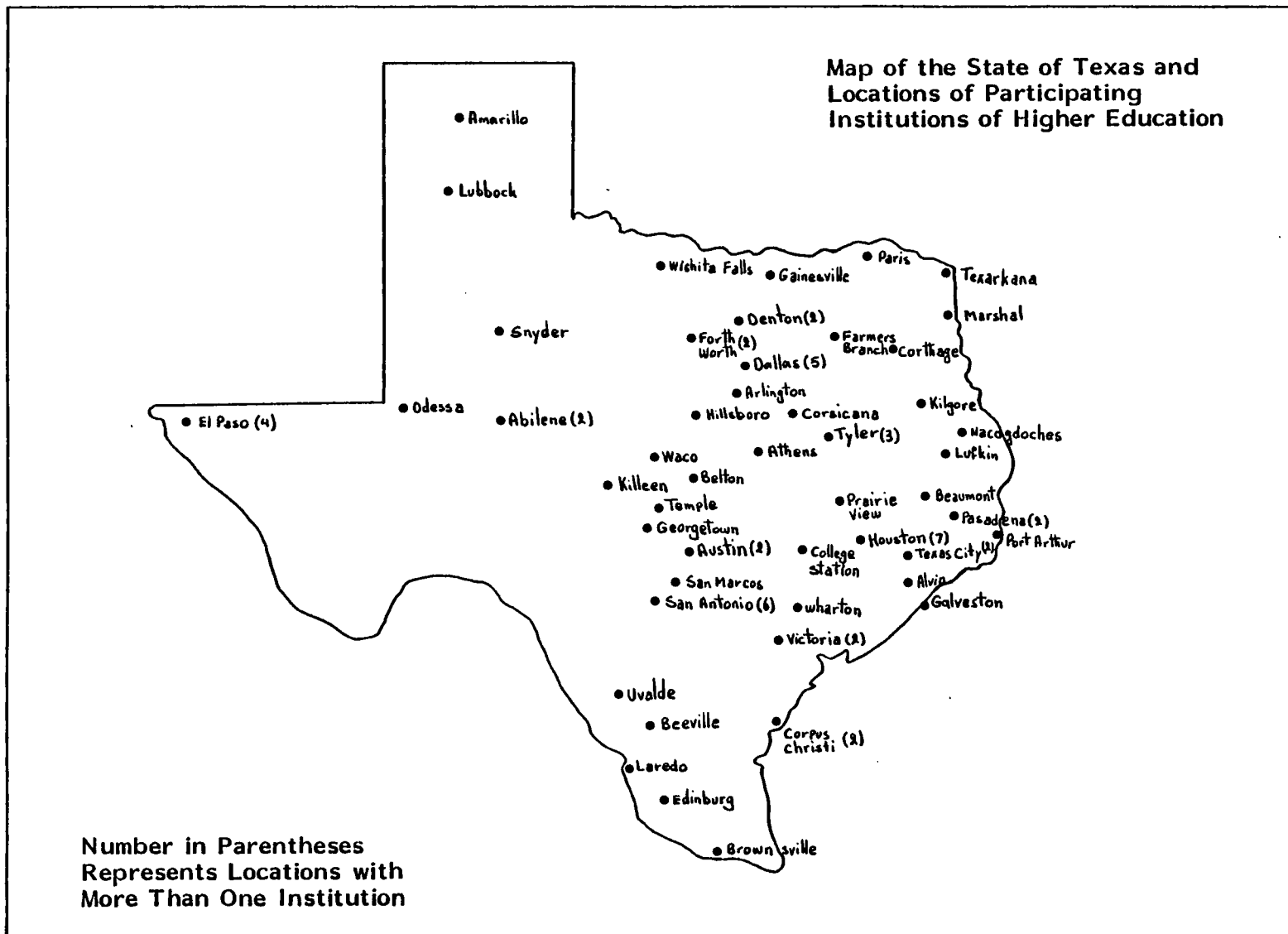


Figure 1

skills. It was assumed that institutions which place more emphasis and value on demand assessment are more likely than others to have a better job placement rate. This assumption is made because in such institutions career counseling and development centers often assist students to assess market demand and accurately plan their majors and careers to improve employability in the job market.

Institutional Development (ID): This scale measures the alternatives applied by an institution to expand the lines of program activities.

Rander et al. (1975) emphasize strongly the need for expanded market research and planning at the institutional level and expanded use of data in developing internal resources. Market research strategies may help to establish a better position in the market and consequently attract more students. Institutions which place more emphasis and value on implementation of the strategies and programs which help to better equip students for the labor market are more likely than others to have a lower attrition rate.

Market Analysis (MA): This scale is composed of several institutional activities which explain not only the characteristics of the students and potential student market, but also explain the institutional position in relation to similar or competitor institutions in the region. Market analysis will help the institutions to determine the potential location and size of markets for students of varying types. From an institution's point of view, market analysis will develop knowledge of the characteristics of the potential demand. Therefore, when enrollments decline, interest in market analysis becomes stronger.

Market Development (MD): This scale contains strategies that are initiated to expand the market. According to Kotler (1976), institutions

should develop distribution and communication programs that not only contact the new potential student markets but also facilitate access to institutional services. Manpower/Market Strategies identify the activities which institutions might select to overcome or deal with truncated applicant pools and increase employability of their graduates.

The institutional researchers in the sample completed a rating scale which assessed the degree of emphasis given to various strategies. A second scale rated the value these initiatives are perceived to have for each of the institutions. Each item in the scale has seven response categories. Each level of the seven-point scale was assigned a number for purposes of analyzing the data, where 1 = little emphasis and value and 7 = heavy emphasis and value. The numbers in between represent the amount of emphasis and value respondents placed between the two extremes.

Assessment of Reliability and Validity. It is important to assess the reliability and the validity of an instrument in social research. Kerlinger (1973) points out that data collected by all social measurements contain errors of measurement. Reliability is gauged by the extent to which measurements are repeatable. In scientific research, the estimated average correlation among items in an instrument is considered as an index of reliability.

The validity of an instrument is the scientific usefulness of that instrument, or the degree to which the instrument measures that which it is intended to measure. According to Kerlinger (1973), there are three types of validity: criterion-related or concurrent validity, content validity, and construct validity.

Criterion-related validity consists of correlations between scores

and criterion variables. The higher the correlation between a measure or measures of independent variables and the criterion variable, the better the criterion validity. This validity is primarily evaluated statistically. How well does the demand assessment scale, for example, predict the job placement rate? A test with high concurrent or criterion-related validity is one that helps an investigator make successful decisions to assess the treatment. The Brazziel (1978) study of Manpower/Market Strategy, with 80% of the officials participating, indicates that efforts to adjust programs to the needs of the market resulted in an increase of 5 to 10% in placement and in enrollment.

In discussing content validity, Kerlinger (1973) indicated that since an instrument rarely covers all of the possible questions that could be asked in a specific area, an assessment of the sample items that constitute the scale is necessary. Therefore, content validity refers to the adequacy with which the scale items are representative of a specified universe of content. The Brazziel's Manpower/Market Strategy instrument was tested for face and content validity with experts and specialists from the Professional Institute of the American Management Association, the Society of College and University Planning, the Council for the Advancement of Small Colleges, and the Western Interstate Commission on Higher Education. The agreement of these experts on the content of the instrument and discussions documented through the review of the literature represented that MMS may be a valid instrument for the final study.

Construct validity emphasizes theoretical purposes, searching for the identification of the theoretical construct and tries to establish validity through empirical research which involves the testing of hypothesized

relationships with other constructs. Therefore, construct validity is an evaluation of the research findings which produce an indication of instrument quality. Brazziel (1978) tested the nature and the extent of uses of manpower and labor market data in the planning operations of 76 colleges and universities (12 public four-year colleges, 23 public two-year colleges, 36 private four-year colleges, and five private two-year colleges). The institutions in the sample were nominated by a national panel as bellwether schools in planning with manpower and labor market data. The findings of the study showed that the percentage increases in enrollment, persistence, and placement of graduates is highly correlated to the amount of emphasis and value which the institutions placed on Manpower/Market Strategies. The findings of the study held when the data were desegregated according to control and level of institution, i.e., public/private, two-year/four-year.

Reliability is defined as the effectiveness with which an instrument measures a variable with the least possible error. In other words, reliability is the degree to which the scale shows consistency when administered a number of times. To confirm the reliability of Brazziel's Manpower/Market Survey, a pilot test was conducted in May 1980. The pilot study consisted of the following steps: The pilot instrument was sent to a randomly selected sample of 40 institutions of higher education in four states (Florida, Louisiana, Alabama, Mississippi). The cover letter asked the administrators to complete the questionnaire, make suggestions and comments, and return it in an enclosed self-addressed, stamped envelope. Within five weeks, 45% of the institutions had responded. Telephone calls were made to some of the institutions in order to elicit further comments regarding the questionnaire and responses to it. A total of 22 institutions (55%) participated in the pilot study.

The raw data were transferred to computer coding forms and then were transferred to computer punch cards. The Statistical Package for the Social Sciences (SPSS) computer program was used to analyze the data.

Revisions Based on Pilot Study

In refining the statements on the questionnaire, a correlation coefficient (Alpha) range of .35 to .84 was utilized (Table 2). It was found that a few items in the indexes did not correlate strongly with the whole test..

Careful study of the pilot test responses, including comments and criticisms, guided the researcher in making the following adjustments to the pretest instrument: (a) the structure of the statements with low Alpha coefficient was changed; (b) one open-ended question was removed (not many responded in the pilot study); and (c) statements were replaced in the market development strategies scales to cover more recent approaches in this area.

The number of items in each scale of the final instrument was demand assessment, 5 items; institutional development, 7 items; market analysis, 8 items; and market development, 5 items.

Included in Table 2 are correlation coefficients between the score on each item for each index and the Alpha coefficient on the total test. The Alpha range of .35 to .86 isolated 18 statements. The Alpha coefficients represent discrimination across all four indexes; these indexes appeared to be proper statements to measure the emphasis and value of the alternative implemented by the institutions.

The Alpha coefficient in the pilot study was high enough to assure the internal consistency and dependability of the instrument. The Alpha for each item and each index are calculated and listed in Table 2.

Table 2
Coefficient Alpha and Correlation Analysis
of Manpower/Market Strategies for
Each Item and Scale

Factor and Item	Item Correlation to Total		Alpha
	Emphasis	Value	
Market Analysis:			.84/.80
E 1 / V 1	.77	.70	
E 2 / V 2	.71	.69	
E 3 / V 3	.36	.32*	
E 4 / V 4	.78	.65	
E 5 / V 5	.67	.63	
Institutional Development:			.81/.80
E 6 / V 6	.48	.43	
E 7 / V 7	.33	.40*	
E 8 / V 8	.43	.57	
E 9 / V 9	.35	.31	
E 10 / V 10	.66	.51	
E 11 / V 11	.54	.53	
E 12 / V 12	.51	.45	
E 13 / V 13	.65	.54	
E 14 / V 14	.86	.80	
E 15 / V 15	.29	.24**	
Market Analysis:			.80/.63
E 16 / V 16	.48	.20*	
E 17 / V 17	.71	.44	
E 18 / V 18	.59	.36	
E 19 / V 19	.47	.53	
E 20 / V 20	.77	.48	
Market Development:			.55/.68
E 21 / V 21	.15	.54**	
E 22 / V 22	.36	.35	
E 23 / V 23	.62	.37	
E 24 / V 24	.20	.40**	
E 25 / V 25	.26	.60**	

*Structure of statements was changed for final instrument.

**These statements were replaced by new ones.

It is rare to find organizational attitudes treated as an important factor affecting the implementation of planning strategies. According to Blau (1973), more attention to organizational features in the process of change is needed because organizational attitudes and environmental dynamics are the major independent variables. What organization characteristics influence the amount of emphasis and value the institutions place on the implementation of the MMS? This study examined the effects of an institution's characteristics of size, location, enrollment trend, control, level, and the degree of enrollment decline on the implementation of MMS. The operational definition of each construct is discussed in the following sections.

Operational Definition of the Variables

Size. In this study, institutions were categorized as large and small. Institutions with a headcount enrollment in fall 1980 equal to or more than 7,000 were considered as large, and others were categorized as small institutions.

Location. Geographic areas served by institutions are separated into two types of locations: (a) rural--located in a small city or town with less than 50,000 population within 20 miles of the population center; (b) urban and suburban--located in a metropolitan area or in the suburbs of a large city with more than 50,000 population.

Level. Junior/community colleges as a general category were compared with senior institutions; upper division institutions also are considered as senior institutions.

Control. Private institutions were compared with public institutions in relation to the amount of emphasis and value they place on planning in

the face of enrollment decline.

Enrollment Trend. The actual enrollment data for each institution were collected, and the trend of student enrollment for each institution from fall 1975 to fall 1980 was calculated. Institutions which experienced a decline of more than 5% over the six-year period were categorized as "declining" trend, and other institutions were classified "stable" or "growing" enrollment.

Deviation from Coordinating Board's Projection. The Coordinating Board, Texas College and University System, periodically develops long-range enrollment forecasts for Texas public colleges and universities. In this study, the institutions whose actual enrollments deviated negatively from the Coordinating Board's Projection were separated to test the effects for this deviation on selection of strategies.

Data Collection Procedure

The final instrument of 25 statements was sent to the Directors of Institutional Research and Planning of 120 institutions of higher education in the state of Texas (except medical, theological, and professional institutions, and two-year private institutions). Attached to each questionnaire was a self-addressed, stamped envelope. After three weeks, a duplicated questionnaire was sent to those institutions which had not already returned their questionnaires. A week later, telephone calls were used in an effort to obtain maximum return of the survey instrument. The overall rate of return was 68%.

Data Analysis

Discriminant function analysis and stepwise multiple regression analysis are the statistical approaches which were applied in this study to test hypothesis H_1 . First, discriminant function analysis was used

to distinguish between two or more groups of cases. The mathematical objective of discriminant function analysis is to weight a linear combination of the discriminating variables in some fashion so that the institutional characteristics (independent variables) are forced to be as statistically distinct as possible. In other words, the study wants to be able to "discriminate" between the groups in the sense of being able to tell them apart. By taking several strategies and mathematically combining them, one would hope to find a single dimension on which, for example, public institutions are clustered at one end and private at the other.

Another way of assessing the relative importance of the original variable in relation to each discriminant function is to compute the standardized discriminant function coefficient. Standardized coefficients are obtained by multiplying the coefficient of each standardized discriminant function by the standard deviation of the original variable associated with the coefficient (Stevens, 1972). A standardized coefficient shows the fractional contribution of each of the variables to separation of each discriminant variable. The negative or positive sign of the coefficient shows the negative contrast or positive relationship between dependent and independent variables.

With discriminant function analysis, one can look at linear combinations of manpower/market strategies to predict independent variables. The interpretation of the results was parallel to discussion with statements of the hypothesis. In other words, the manpower/market strategies are dependent variables and would be explained by, for example, institutional size (independent variable). This is to say that an independent variable will determine the type of strategies (dependent variable) being selected. The significant level (.05) was established to determine

the significance of the overall model. If the overall model was significant, then the relative contribution of each item was reported and discussed. In cases in which the overall model was not significant, coefficients were reported without discussion.

Second, stepwise multiple regression analysis was used to examine for the additional predictive power obtained when other institutional characteristics are included in the equation as compared with the variance already explained by variables in the equation. The overall (F) value was used to test the model. In other words, a dependent variable or criterion can be related to any number of independent variables by a multiple correlation coefficient (Blalock, 1972). The computer was programmed to enter first the independent variable in that block which had the highest correlation with the criterion. The second variable to be selected was that which added most to the multiple correlation and therefore made the greatest reduction in the unexplained variance. The remaining variables followed in the same way until no significance was made by adding new variables. In other words, the computer selects the variables according to the size of their contribution and places them in the predictive equation.

The Pearson Product-Moment correlation was used to test hypotheses H_2 , H_3 , H_4 , and H_5 . This statistical procedure was used to determine relationships, if any, between Manpower/Market Strategies (the likelihood that an institution places emphasis on MMS) and changes on placement rates, attrition rates, types of students enrolled, and enrollment trend.

Summary

The Directors of Institutional Research and Planning of 120

postsecondary institutions in the state of Texas constituted the population for this study.

The primary instrument used in this study was a revised form of Brazziel's (1978) Manpower/Market Planning Scale. This instrument consists of 25 planning statements which can be implemented to overcome the problem of enrollment decline and job placement. This scale measures the amount of emphasis and value the institutions place on these planning strategies. The instrument was pilot tested for validity and reliability, and minor adjustments were made in the final instrument.

The Manpower/Market Strategy questionnaire was mailed to 120 institutions of higher education (except medical, professional, theological institutions and two-year private colleges) in the state of Texas. The total number of usable returned questionnaires was 81, or 68% of the study sample. Multiple regression analysis, discriminant function analysis, and Pearson Product-Moment correlation were the primary statistical methods utilized to test the study hypotheses.

CHAPTER IV

ANALYSIS OF DATA

The previous chapters of this study have introduced the problem, reviewed pertinent literature, and described the procedures for conducting the study. This chapter reports the findings resulting from the statistical analysis of data. The data in this study were analyzed through the use of discriminant function analysis, multiple regression, and Pearson Product-Moment correlation statistical techniques. These data, among other things, describe the amount of emphasis and value educational administrators (planners) place upon the use of Manpower/Market Strategies (MMS) in Texas institutions of higher education. In addition, the discussion will include the analysis of the institutional characteristics as independent variables to differentiate institutions' planning strategies. This chapter also includes the discussion of MMS and its anticipated outcomes.

Conclusions, implications, and recommendations from this analysis of the data can be found in Chapter V.

Findings of the Study

The population for this study consisted of Directors of Institutional Research and Planning of 120 postsecondary institutions in the state of Texas. A total of 63 public and 18 private institutions participated in this study. These administrators were asked to rate the amount of emphasis and value they placed on Manpower/Market Strategies (MMS) in their institutional planning during the last six years of the 1970's by

means of a seven-point Likert type scale. Table 3 shows the mean, standard deviation, and the number of items in each scale. Table 4 presents the sample size and number of responses in each institutional category.

Table 3
Mean and Standard Deviation of the Emphasis
and Value Ratings on MMS

	<u>Mean</u> <u>Emphasis Value</u>		<u>Std. Dev.</u> <u>Emphasis Value</u>		<u>No. of</u> <u>Items</u>
Demand Assessment (DA)	19.3	23.2	6.1	5.1	5
Institutional Development (ID)	34.1	40.6	8.4	7.4	8
Market Analysis (MA)	19.5	24.1	6.4	6.0	5
Market Development (MD)	33.3	36.6	7.9	7.0	7

The MMS consisted of a total planning activity scale which was broken into four subscales: Demand Assessment (DA), consisting of 5 items which represent institutional involvement in utilization of market data to assess demand for graduates; Institutional Development (ID), consisting of 8 items which represent the process of institutional adjustment to market need; Market Analysis (MA), consisting of 5 items which explain institutional efforts in analyzing the market condition; and Market Development (MD), containing 7 items which explain the institutional activities in development of new markets.

The questionnaire was developed to elicit ratings for various MMS in two categories, emphasis and value. The distinction between the two basically can be summarized as follows. Emphasis refers to the feasibility of the alternatives, or the amount of emphasis they place on implementation of that alternative. Value, on the other hand, relates to the

Table 4
Institutional Type, Sample Size, and Number of Responses
for Different Types of Institutional Characteristics

Institutional Characteristics		Public Senior Colleges and Universities	Private Senior Colleges and Universities	Public Junior and Community Colleges	Total
Urban & Sub.	N	27	21	25	73
	Resp.	22	15	16	53
Rural	N	9	6	32	47
	Resp.	4	3	21	28
Large	N	26	2	12	30
	Resp.	12	1	10	23
Small	N	20	25	45	90
	Resp.	14	17	27	58
Decline Trend	N	5	14	18	37
	Resp.	3	9	10	22
Growth	N	31	13	39	83
	Resp.	23	9	27	59
Neg. Dev.	N	20	10	29	59
	Resp.	15	6	26	37
Pos. Dev.	N	16	17	28	61
	Resp.	11	12	21	44
Total	N	36	27	57	120
	Resp.	26	18	37	81

respondent's personal acceptance of the alternative--what the respondent would value for the use of the alternative.

The means of value ratings were higher than means of emphasis ratings in all cases. The means represent the average amount of emphasis and value administrators placed on the four components of MMS. Mean ratings for emphasis on DA strategies were slightly below the mid-point of the scale, while DA value means were above the mid-point of the scale. Institutional development strategies received high ratings in both emphasis and value. Market analysis strategies' mean ratings were slightly below the mid-point of the scale for emphasis and were above the mid-point of the scale for value rating. Market development received high ratings in both emphasis and value.

Intercorrelation coefficients between the four subscales of MMS ranged from .49 to .61 for the emphasis ratings and from .48 to .57 for the value ratings. Correlation coefficients are presented in Tables 5 and 6; they represent the degree of association between scales. The degree of association was significant in each case, both for emphasis and value.

Table 5
Correlation Coefficients for Emphasis Ratings
on Manpower/Market Strategies

Variables	1	2	3	4
Demand Assessment	1.00			
Institutional Development	0.61*	1.00		
Market Analysis	0.54*	0.51*	1.00	
Market Development	0.49*	0.50*	0.55*	1.00

*Significant at $p < .05$.

Table 6
Correlation Coefficient for Value Ratings
on Manpower/Market Strategies

Variables	1	2	3	4
Demand Assessment	1.00			
Institutional Development	0.52*	1.00		
Market Analysis	0.52*	0.53*	1.00	
Market Development	0.48*	0.50*	0.57*	1.00

*Significant at $p < .05$.

The correlations show that institutions higher in one strategy tend to be high in the others. The significant intercorrelations presented in Tables 5 and 6 support the construct validity of the MMS. Correlation between strategy scores is indicative that each strategy contributes to the overall theoretical construct of the MMS.

Hypothesis One

The first hypothesis concerns the extent to which MMS would be able to differentiate institutions on the basis of the control, size, enrollment trend, enrollment deviation, location, and level. This hypothesis was tested using the computer program for discriminant function analysis and for multiple regression analysis from the Statistical Package for the Social Sciences (SPSS) (Nie, Dale, Jenkins and Hull, 1975).

Testing of this hypothesis was first conducted utilizing discriminant function analysis. This analysis began by choosing the single manpower/market strategy variable which best discriminates between the various categories of institutional type. This initial variable was then paired with each of the other strategies, which explains the greatest amount of variance in addition to that strategy already in the equation; these two

strategies are then combined with each of the remaining variables, one at a time. In other words, an independent variable will be selected for entry into the analysis on the basis of its discriminant power, in addition to the independent variables already in the equation.

Second, this hypothesis also was tested through the use of multiple regression analysis, which allows for an examination of the combined institutional characteristics as they predict each of the planning strategies.

Discriminant function analysis and multiple regression are formally equivalent for the two-group case (Bartlett, 1974). The discriminant function is the linear function that would be obtained if a formal multiple regression is made of the independent variable on the set of dependent variables, the roles of dependence and independence being reversed (Stevens, 1972).

Discriminant Function Analysis

The number of discriminant functions which are statistically significant is the number of dimensions in which there is a sizeable separation of the groups (Bock and Haggard, 1968). If original variables are highly correlated with the first discriminant function, then one could conclude that these variables are primarily responsible for the separation that has been achieved along that variate.

Another way of assessing the relative importance of the original variable in relation to each discriminant function is to compute the standardized discriminant function coefficient. Standardized coefficients are obtained by multiplying the coefficient of each standardized discriminant function by the standard deviation of the original variable associated with that coefficient (Stevens, 1972). In this way, the fractional contribution of each of the original variables to spread each discriminant

function was taken into consideration. The fractional contribution of each item was accounted for in those cases in which the overall model was significant.

Institutional Control

Part (a) of Hypothesis One, H_{1a} , was as follows: Private institutions are more likely than public institutions to place emphasis and value on MMS.

Tables 7 and 8 show the mean ratings of the emphasis and value which institutions placed on MMS by type of institution. A total of 63 public and 18 private institutions participated in this study.

Table 7
Group Mean by Control of Institution for Emphasis
on Manpower/Market Strategies

Variable	N	DA	ID	MA	MD
Public	63	20.0	33.8	19.1	33.5
Private	18	16.5	35.1	21.1	32.6
Total	81	19.3	34.1	19.5	38.3

Table 8
Group Mean by Control of Institution for Value
on Manpower/Market Strategies

Variable	N	DA	ID	MA	MD
Public	63	22.9	39.4	23.9	36.7
Private	18	24.2	44.8	24.8	36.1
Total	81	23.2	40.6	24.1	36.6

Table 9 shows the result of testing Hypothesis One related to control of institutions. The standardized coefficients indicate the relative contribution of each manpower/market strategy to separation of public institutions from private. Differences were significant in amount of emphasis

on demand assessment strategies and amount of value on institutional development strategies. Therefore, significant differences at the $p < .01$ level were found between the control of institutions and strategy implementation. Public institutions' emphasis on demand assessment strategies are significantly higher than those of private institutions, while private institutions are placing a significant amount of value on institutional development strategies.

Table 9

Discriminant Function Coefficients for Public
and Private Institutions' Emphasis and Value
Ratings on Manpower/Market Strategies

Variable	Standardized Coefficient	
	Emphasis	Value
Demand Assessment	1.32*	-0.01
Institutional Development	-0.70	1.21*
Market Analysis	-0.85	-0.08
Market Development	0.28	-0.69

*Significant at $p < .01$.

Overall significance for emphasis was $p < 0.0019$ and for value was $p < 0.018$. The standardized coefficients indicate that demand assessment and institutional development contributed most of the differences between institutional control. Demand assessment with a positive coefficient contrasts with institutional development and market analysis, which exhibits a negative coefficient. A positive score for this function reflects the direction and amount of the emphasis an institution places on the development of strategies to analyze market demand for the graduates. The absolute value of the coefficient indicates its importance in the interpretation of the function. The sign indicates its direction toward the

positive or negative end of the continuum of interpretive statements. For example, institutional development value ratings contrasted with market development value ratings. In other words, institutions which placed more value on institutional development strategies are those which placed less value on market development and tend to be private institutions, while institutions with high emphasis on demand assessment or low emphasis on market analysis strategies tend to be public. The discriminant scores for each of the four components of MMS by emphasis and value are listed in Table 9.

Institutional Size

Part (b) of Hypothesis One, H_{1b} , was as follows: Smaller institutions are more likely than larger institutions to place emphasis/value on MMS.

Tables 10 and 11 show the mean ratings of the emphasis and value institutions placed on MMS. The institutions were categorized as small or large on the basis of their spring 1980 headcount enrollment. Institutions with enrollment over 7,000 are considered large, and others are categorized small. A total of 58 small and 23 large institutions participated in this study.

Table 10

Group Mean of Emphasis Ratings on Manpower/Market
Strategies by Size of Institution

Variable	N	DA	ID	MA	MD
Small	58	19.4	34.3	19.5	33.0
Large	23	18.8	33.6	19.3	34.0
Total	81	19.3	34.1	19.5	33.3

Table 11

**Group Mean of Value Ratings on Manpower/Market
Strategies by Size of Institution**

Variable	N	DA	ID	MA	MD
Small	58	23.4	40.7	23.4	36.5
Large	23	22.8	40.3	24.7	37.0
Total	81	23.2	40.6	24.1	36.6

Table 12 shows the results of testing this hypothesis. The results indicate that there are no significant differences between the strategy selection and the size of the institutions. Overall significance for emphasis was 0.91 and for value was 0.85. The MMS scales were not able to discriminate significantly between the large and small institutions; therefore, the hypothesis was not supported.

Table 12

**Discriminant Function Coefficients for Small/Large
Institutions' Emphasis and Value Ratings on
Manpower/Market Strategies**

Variable	Standardized Coefficient	
	Emphasis	Value
Demand Assessment	-0.54	0.77
Institutional Development	-0.45	0.51
Market Analysis	-0.26	-1.06
Market Development	1.15	-0.27

Enrollment Deviation

Part (c) of Hypothesis One, H_{1c} , was as follows: Institutions experiencing negative enrollment deviation from the Coordinating Board's 1978 Projections in Texas are more likely than others to place emphasis and value on MMS.

The means of the responses of the increase and decrease groups are indicated in Tables 13 and 14. Increase are those institutions in which the actual enrollment equalled or exceeded the projection. Decrease are those institutions whose actual enrollment fell short of the projection by 5% or more.

Table 13

Group Mean of Emphasis Ratings on Manpower/Market Strategies by Deviation of Enrollment

Variable	N	DA	ID	MA	MD
Increase	44	20.0	36.0	20.5	34.0
Decrease	37	18.4	31.9	18.4	32.5
Total	81	19.3	34.1	19.5	33.3

Table 14

Group Mean of Value Ratings on Manpower/Market Strategies by Deviation of Enrollment

Variable	N	DA	ID	MA	MD
Increase	44	23.6	41.2	23.9	36.1
Decrease	37	22.8	40.0	24.3	37.2
Total	81	23.2	40.6	24.1	36.6

The results of testing the hypothesis are shown in Table 15. The results indicate that there are significant ($p < .05$ level) differences between the institutions experiencing negative deviation from projected enrollment and those experiencing increase. Emphasis on institutional development is the element that discriminates between the institutions which experienced negative deviation from those institutions which did not experience negative deviation in enrollment.

Table 15

Discriminant Function Coefficients for Enrollment Deviation
and Institutions' Emphasis and Value Ratings on
Manpower/Market Strategies

Variable	Standardized Coefficient	
	Emphasis	Value
Demand Assessment	0.14	0.62
Institutional Development	-0.99*	0.79
Market Analysis	-0.32	-0.43
Market Development	-0.20	-0.86

*Significant at $p < .05$ level.

Table 15 further indicates that the institutions experiencing negative enrollment deviation place more value on MD. Overall significance for emphasis was 0.29 and for value was 0.61.

Location

Part (d) of Hypothesis One, H_{1d} , was as follows: Institutions located in rural areas are more likely than those in urban and suburban areas to place emphasis and value on MMS.

Tables 16 and 17 illustrate the means of the alternative ratings by location of the institutions: urban and suburban as one category and rural areas as the other.

Table 16

Group Mean of Emphasis Ratings on Manpower/
Market Strategies by Location of Institution

Variable	N	DA	ID	MA	MD
Urban	53	18.8	34.5	19.7	32.8
Rural	28	20.1	33.4	19.2	34.3
Total	81	19.3	34.1	19.5	33.3

Table 17

Group Mean of Value Ratings on Manpower/
Market Strategies by Location of Institution

Variable	N	DA	ID	MA	MD
Urban	53	23.3	41.3	24.6	36.7
Rural	28	23.0	39.3	23.0	36.5
Total	81	23.2	40.6	24.1	36.6

Table 18 presents the results of testing this hypothesis. The results indicate that no significant relationship exists between institutions located in urban and rural areas and strategy selection.

Table 18

Discriminant Function Coefficients for Urban/Rural
Institution's Emphasis and Value on Manpower/
Market Strategies

Variable	Standard Coefficient	
	Emphasis	Value
Demand Assessment	0.96	0.40
Institutional Development	-0.94	-0.75
Market Analysis	-0.58	-0.84
Market Development	0.72	0.58

Institutional Level

Part (e) of Hypothesis One, H_{1e} , was the following: Junior institutions are more likely than senior institutions to place emphasis and value on MMS.

Tables 19 and 20 show the means of the emphasis and value ratings on MMS by level of the institution.

Table 19

Group Mean of Emphasis Ratings on Manpower/
Market Strategies by Level of Institution

Variable	N	DA	ID	MA	MD
Senior Institution	44	18.0	34.2	19.1	31.3
Junior/Community Colleges	37	20.8	34.1	20.0	35.8
Total	81	19.3	34.1	19.5	33.3

Table 20

Group Mean of Value Ratings on Manpower/
Market Strategies by Level of Institution

Variable	N	DA	ID	MA	MD
Senior Institution	44	23.5	42.6	25.0	36.3
Junior/Community Colleges	37	22.9	38.2	23.0	37.0
Total	81	23.2	40.6	24.1	36.6

Table 21 shows the results of the discriminant function analysis in testing this hypothesis. This hypothesis was supported with a significance level of $p < 0.01$. The overall significance level for emphasis was $p < 0.0079$, and for value was $p < .01$.

Table 21

**Discriminant Function Coefficients for Senior/Junior
Institutions' Emphasis and Value Ratings on
Manpower/Market Strategies**

Variable	Standardized Coefficient	
	Emphasis	Value
Demand Assessment	0.82*	0.27
Institutional Development	-0.82	-1.06*
Market Analysis	-0.38	-0.47
Market Development	0.93*	0.82

*Significant at $p < 0.01$.

There was a significant difference between the level of the institutions and the amount of emphasis and value they placed on MMS. Table 21 shows each variable's contribution in distinguishing between the members of junior and senior institutions. Junior and community colleges are less likely to place value on ID, while MD strategies received high value ratings. Standardized coefficients indicate that the value placed on institutional development contributed most of the differences between institutional levels. Junior institutions appear more concerned with emphasis on MD than on DA. The most highly valued strategies for junior institutions appear to be ID. Junior/community colleges are more likely than senior institutions to place emphasis on DA and MD strategies.

Enrollment Trend

Part (f) of Hypothesis One, H_{1f} , was the following: Institutions experiencing a decline in enrollment are more likely than others to place emphasis and value on MMS.

Tables 22 and 23 present the mean ratings of emphasis and value on MMS by institutions experiencing decline or growth. Participating

institutions were divided into two categories: First, those institutions which experienced "stability" or "growth" in enrollment from 1975 to 1980 were considered the growth group. Second, those institutions with enrollment decline were considered as the decline group.

Table 22
Group Mean of Emphasis Ratings on Manpower/
Market Strategies by Enrollment Trend

Variable	N	DA	ID	MA	MD
Growth	59	19.0	34.2	20.1	33.3
Decline	22	18.3	34.0	18.0	33.5
Total	81	19.3	34.1	19.5	33.3

Table 23
Group Mean of Value Ratings on Manpower/
Market Strategies by Enrollment Trend

Variable	N	DA	ID	MA	MD
Growth	59	23.5	40.8	24.5	37.2
Decline	22	22.5	40.1	22.8	35.1
Total	81	23.2	40.6	24.1	36.6

The results of discriminant function analysis, summarized in Table 24, indicate that there are no statistically significant differences between the strategy ratings and enrollment trend.

Table 24
Discriminant Function Coefficients for Growth/Decline
Institutions' Emphasis and Value Ratings on
Manpower/Market Strategies

Variable	Standardized Coefficient	
	Emphasis	Value
Demand Assessment	-0.59	-0.03
Institutional Development	0.53	0.46
Market Analysis	-1.00	-0.67
Market Development	0.65	-0.65

In summary, data presented in this section reveal that type, level, and enrollment deviation are the most important predictors of MMS. The size, location, and enrollment trend variables were found to be nonsignificantly differentiated by MMS.

Multiple Regression Analysis

The second way Hypothesis One was tested was through the use of stepwise multiple regression analysis, which allowed an examination of a combination of institutional characteristics in predicting each of the planning strategies. Kerlinger and Pedhazur (1973) state that "the statistical significance of increments to predication is a powerful method of analysis" (p. 17). Therefore, a stepwise regression analysis was carried out to examine for the additional predictive power obtained when other institutional characteristics are included in the equation as compared with the variance already explained by variable(s) in the equation. The overall (F) value was used to test the model.

Tables 25 and 26 present the bivariate intercorrelation matrix between the dependent and independent variables. The method of statistical analysis was Pearson Product-Moment correlation coefficients

Table 25
Correlation Coefficients Among Institutional
Characteristics and MMS
(Emphasis)

Variable	1	2	3	4	5	6	7	8	9	10
1. DAE	.00									
2. IDE	.61*	.00								
3. MAE	.54*	.51*	.00							
4. MDE	.49*	.50*	.55*	.00						
5. Type	-.24*	.06	.12	-.05	.00					
6. Size	.05	-.00	.02	.04	-.25*	.00				
7. Location	.09	-.06	-.03	.09	-.20	-.06	.00			
8. Trend	-.10	-.03	-.09	.09	.05	.01	-.10	.00		
9. Devia- tion	-.13	-.24*	-.15	-.09	-.13	-.00	.01	.08	.00	
10. Level	.22*	-.00	.06	.28*	-.49*	.07	.16	.12	-.09	.00

*p < .05.

Table 26
Correlation Coefficients Among Institutional
Characteristics and MMS
(Value)

Variable	1	2	3	4	5	6	7	8	9	10
1. DAV	.00									
2. IDV	.52*	.00								
3. MAV	.52*	.53*	.00							
4. MDV	.48*	.50*	.57*	.00						
5. Type	.09	.30*	.06	-.03	.00					
6. Size	.04	-.09	.10	.04	-.25*	.00				
7. Location	-.02	-.13	-.13	-.01	-.20	-.06	.00			
8. Trend	-.12	-.08	-.05	-.07	.05	.01	-.10	.00		
9. Deviation	-.07	-.08	.03	.07	-.13	-.00	.01	-.08	.00	
10. Level	-.05	-.29*	-.16	.04	.49*	.07	.16	-.12	.09	.00

* = $p < .05$.

Intercorrelation coefficients between the four subscales of MMS's were discussed previously and presented in Tables 5 and 6. In Table 25, which shows the correlation of emphasis ratings, the following bivariate relationships were significantly different from zero at the $p < .05$ level: Control correlated with demand assessment, size of the institution correlated with control, deviation correlated with institutional development strategies, and level correlated with demand assessment, market development, and institutional control. Table 26, which shows the correlation of value ratings, indicates that control of institution correlated with institutional development strategies, size correlated to control of the institution because a majority of private institutions are categorized as small, and institutional level correlated with institutional development activities and with control of the institution. The absence of private junior colleges may be the reason for high correlation between level and control. The matrix indicates no other statistically significant relationships at the $p < .05$ level.

Demand Assessment: The stepwise regression analysis for emphasis on demand assessment strategies indicates that there is a significant correlation ($R = 0.24$) between the control of the institution and the amount of emphasis the institutions place on DA strategies. The overall F test ($F = 4.83$) was found to be significant. Approximately 5% of the variance was accounted for by the type ($R^2 = 0.057$). It appears that public institutions place more emphasis on institutional development strategies than private institutions. The analysis of data further indicated that control strongly correlated with level of the institution. Since these two variables depend on each other, this fact should be taken into

account in the interpretation of the data. In addition, the control correlated significantly with the emphasis on demand assessment ($R = 0.24$), which indicates that the public institutions correlated negatively with amount of emphasis on demand assessment strategies. It appears that institutions with high emphasis on DA tend to be public junior institutions.

The analysis for value on DA strategies showed no significant relationship.

Institutional Development: The data analysis for the emphasis ratings on institutional development indicates that there are significant relationships between institutions experiencing negative enrollment deviation and the amount of emphasis institutions place on institutional development strategies. Enrollment deviation entered the equation in the first step. The F value of the overall model was 4.8, which was significant at $p < .05$. A beta weight of -0.23 was obtained. In the second step, when location entered the equation, the overall F and partial F were not significant.

The data analysis for value rating on institutional development strategies revealed that the institutional control is the most important predictor of the institution's strategy selection. Control entered the equation in the first step; the F value of 8.59 was found to be significant. A beta weight of -0.19 was reached. In the second step, when level entered the equation, the overall model was significant ($F = 5.3$). Addition of level reflected an R^2 change of approximately 3 percent (from 0.10 in step one to 0.13 in step two). The high correlation between control and level ($r = .49$) should be mentioned once more for interpretation of the data. The data analysis indicates that control of the institutions is the greatest contributor to the amount of variation, and level is the

second most important variable. Adding level as a joint variable increased the prediction power of the equation. In comparison to the control, the level produced a significant ($p < .05$) F ratio in the second equation ($F = 5.38$). Moreover, the positive institutional control beta weight of 0.18 shows that the private senior institutions place more value on institutional development strategies.

Marketing Analysis: The stepwise multiple regression analysis for emphasis and value ratings on market analysis strategies indicates that there is no significant correlation between institutional characteristics and amount of emphasis and value institutions place on market analysis strategies. The F ratio in the equation was significant in neither emphasis, $F = 2.0$, nor for value, $F = 2.2$. Market analysis strategies deal with the institutional efforts in identification of potential student markets and suggest new marketing management tools, such as positioning and market segmentation studies for market research. This type of research requires implementation of a complete and comprehensive marketing plan and gathering information from potential markets. It appears that the institutions are placing less emphasis and value on use of these strategies.

Market Development: The stepwise multiple regression analysis for the amount of emphasis an institution places on Market Development (MD) strategies indicates that a statistically significant relationship does exist between different characteristics of institutions and the emphasis they place on MD strategies.

In the stepwise multiple regression analysis, level was entered on the first step. It was found to be positively and significantly correlated with the amount of emphasis institutions placed on market development strategies ($R = .28$). The F value of ($F = 6.89$) indicated that correlation

is significant at $p < .05$ level. Variable control was entered on the second step. The $F = 3.8$ indicated that correlation is not significant. Moreover, institutional level beta weight was 0.31, while for institutional type beta weight was 0.11.

The data analysis indicates that institutional level is a good predictor of emphasis on market development strategies. It appears that the junior/ community colleges are placing more emphasis on MD strategies compared to senior institutions.

For the value rating for MD, the relationship was found to be nonsignificant.

In summary, MMS as perceived by administrators from the different schools grouped by institutional characteristics are presented in Tables 6 through 23. The data presented are relevant to Hypothesis One. The analysis indicates that the control (public/private) and level (senior/ junior) contribute most to distinguishing strategies they select. Discriminant function analysis supported the same conclusion. In addition, discriminant function analysis revealed that institutions which experienced decline in enrollment (compared with projected enrollment) place more emphasis on DA strategies. It appears that the influence of the size, location, and enrollment trend are nonsignificant on strategy selection as tested by multiple regression and discriminant function analysis.

Hypothesis Two

The second hypothesis, H_2 , was as follows: Institutions which place more emphasis and value on demand assessment are more likely than other institutions to have higher placement rates.

For the purpose of this analysis, emphasis on demand assessment strategies was considered the independent variable. A significant

positive correlation between demand assessment emphasis and the placement of the institution's graduates was found. The correlation ($r = .25$) was significant at $p < .05$.

This investigation supports Hypothesis Two and shows that institutions which placed more emphasis on demand assessment (adjusted programs to assess the market demand) are more likely to have a better placement rate than other institutions. The correlation coefficient between the emphasis and value ratings on DA and job placement rate is presented in Table 27.

Table 27

Pearson Product-Moment Correlation for Placement
and Ratings on Demand Assessment Strategies

Variable	Demand Assessment	
	Emphasis	Value
Placement	24*	14

*Significant at $p < .05$.

Hypothesis Three

The third Hypothesis, H_3 , was this: Institutions which place more emphasis and value on institutional development (e.g., initiate programs to meet demand) are more likely than other institutions to have lower attrition rates.

The test of Hypothesis Three reveals that perception of student attrition (stopout, dropout, and transfer) and institutional development strategies are significantly related to each other. The correlation coefficients are shown in Table 28.

Table 28

Pearson Product-Moment Correlation for Student
Attrition and Ratings on Institutional
Development Strategies

Variable	Institutional Development	
	Emphasis	Value
Stopout	0.14	0.24*
Dropout	0.24*	0.21*
Transfer	0.10	0.23*

*Significant at the $p < .05$ level.

Institutions with higher emphasis on ID strategies are more likely to have a lower dropout rate. The correlation ($r = .24$) was significant at $p < .05$. Strategies in ID represent activities which institutions may select to adjust their programs to the needs of the market. Moreover, the rates of stopout, dropout, and transfer are more likely to be lower if the institution places more value on ID strategies. Therefore, this hypothesis was supported.

Hypothesis Four

The fourth Hypothesis, H_4 , was the following: Institutions which place more emphasis and value on market analysis (e.g., use market data to project potential student market) are more likely than others to have higher percentage rates of enrollment of minorities, women, and older students.

The data in Table 29 indicate that there were no statistically significant relationships between the amount of emphasis and value institutions place on market analysis and increase in type of student. Therefore, this hypothesis was not supported.

Table 29
Pearson Product-Moment Correlation for Type of
Student and Ratings on Market
Analysis Strategies

Variable	Market Analysis	
	Emphasis	Value
Women	0.13	0.05
Minority	0.15	0.00
Older	0.15	0.05

Hypothesis Five

The fifth Hypothesis, H_5 , was the following: Institutions which place more emphasis/value on market development (e.g., utilize contacts with potential markets) are less likely than others to have enrollment decline.

Test of H_5 revealed that there was no statistically significant relationship between emphasis on market development and enrollment decline. The correlation coefficient between market development emphasis and enrollment decline ($r = .09$) was found to be nonsignificant. For the value ratings, the correlation ($r = .18$) also was nonsignificant. Therefore, this hypothesis was not accepted.

Summary

The large observed differences among institutions in educational outcomes appears to be more a function of differences in their control, level, and enrollment deviation than of differences in size, location, and their enrollment trend. Although the categories "public" and "private" and "junior" and "senior" each comprise heterogeneous collections of institutions, the public/private dichotomy attains increasing policy significance as many private institutions are threatened by enrollment

decline. Private senior institutions tend to be smaller than most public institutions. As a result, it appears that private institutions are placing more value on institutional development strategies compared to public institutions, while public institutions place more emphasis on demand assessment strategies. Finally, the relationships between the emphasis on demand assessment strategies and placement rate was found to be significant. The relationships between institutional development strategies and attrition rate were also significant.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter summarizes the study's purpose, problems, hypotheses, and methodology, followed by the results. An explanation of results and conclusions drawn from analysis of the data is presented and finally implications and recommendations based on this study are offered.

Summary

The purpose of this study was to examine the amount of emphasis and value which institutions of higher education placed on Manpower / Market Strategies (MMS) in the last six years (1975-80) and the outcomes of these policy initiatives in terms of job placement, retention/attrition, enrollment trend, and enrollment of minority groups of students as perceived by administrators. The analysis also examined the relationships between institutional variables and administrators' selected strategies. The selected variables were level of institution (junior/community college, senior institution), location (urban/suburban, rural), size (small, large) control (public, private), enrollment trend (growth, decline), and negative deviation from projected enrollment.

The study arose out of a need to identify the effects of different characteristics of institutions on selection of manpower/market strategies. It studied the methods or alternatives used to cope with or compensate for the loss of students and, equally important, to identify activities sponsored by institutions to improve job market entry for college

graduates in Texas higher education.

A review of the related literature established that declining enrollments and the question of marketable skills for the graduates pose many political, educational, and financial problems for institutions of higher education. The literature cites manpower/market planning and institutional adjustment to the needs of the market as major factors in successfully confronting the challenges precipitated by declining enrollment.

Studies by Bowen (1973), Hopkins (1974), Doerman (1976), Norris et al. (1978), Kotler (1975), Brazziel (1978), and many other advocates of marketing and manpower management in higher education predict that planning for manpower and marketing management will become more vital in the near future in higher education. Additional studies indicate a need for the use of institutional characteristics as independent variables.

According to Blau (1973), institutional characteristics can be subjected to tests for the effects on administrative decisions related to institutional change. He suggested that expanding organizational size, for example, reduces the administrative resistance to change. The major hypotheses presented in this study are that the different characteristics of organizations may influence administrative emphasis and value on Manpower/Market Strategies.

The Hypotheses

The study's hypotheses were the following:

- H₁. For each Manpower/Market Strategy (MMS) (demand assessment, institutional development, market analysis and market development), the emphasis and value, as perceived by administrators, will be such that:

- H_{1a}. Private institutions are more likely than public institutions to place emphasis and value on MMS;
 - H_{1b}. Smaller institutions are more likely than larger institutions to place emphasis and value on MMS;
 - H_{1c}. Institutions experiencing negative deviation from the Coordinating Board, Texas College and University System enrollment projections are more likely than other institutions to place emphasis and value on MMS;
 - H_{1d}. Institutions located in rural areas are more likely than urban and suburban institutions to place emphasis and value on MMS;
 - H_{1e}. Junior institutions are more likely than senior institutions to place emphasis and value on MMS;
 - H_{1f}. Institutions experiencing decline in enrollment trend during the 1975–1980 period (1980 compared to 1975) are more likely than others to place emphasis and value on MMS.
- H₂. Institutions which place more emphasis and value on demand assessment are more likely than other institutions to have higher placement rates as perceived by administrators.
- H₃. Institutions which place more emphasis and value on institutional development are more likely than other institutions to have lower attrition rates as perceived by administrators.
- H₄. Institutions which place more emphasis and value on market analysis are more likely than others to have higher percentage rates of enrollment of minorities, women, and older students.
- H₅. Institutions which place more emphasis and value on market development are less likely than others to have enrollment decline.

Methodology and Procedures

Brazziel's Manpower/Market Planning and Development Activities Scale, employing a Likert-type scale and consisting of sets of alternative, which reflect the essence of concepts of manpower/market strategies, was modified and used in the study.

The study instrument was distributed to a sample of 120 institutions of higher education in the state of Texas. Coded survey instruments with cover letter and stamped, self-addressed return envelopes were mailed to the Directors of Institutional Research and Planning of each target institution. Rigorous follow-up procedures, including a second mailout and telephone calls brought the return of 81 completed surveys (68% of the original 120). The data were transferred to data-computer sheets and then to computer punch cards to be analyzed by the computer, using the Statistical Package for the Social Sciences (SPSS).

Discriminant function analysis and stepwise multiple regression were used to test the six parts of Hypothesis One. The purpose of discriminant function analysis was to examine how far it was possible to distinguish between members of various groups on the basis of observations made upon them. The use of discriminant function analysis here was to characterize major differences among the institutions in relation to the amount of emphasis and value they place on Manpower/Market Strategies. Multiple regression was used to investigate combination effects of several institutional characteristics on Manpower/Market Strategy (MMS) selection. Pearson Product-Moment correlation analysis tested the relationships between the MMS and the outcomes of these policy initiatives for Hypotheses 2 through 5.

Test of the Hypotheses

This study supported Hypothesis H_{1a} , that the type of control (public/private) was able to predict the amount of emphasis institutions placed on demand assessment strategies and also to predict the amount of value placed on institutional development strategies. Therefore, H_{1a} was supported (a .05 level of confidence was applied as a criterion for significance in this study).

It appears that private institutions tend to place more emphasis on institutional development strategies, while public institutions are more likely to place more emphasis on demand assessment strategies. The public institutions are more vocationally oriented according to the amount of emphasis they placed on demand assessment strategies. It seems also that public institutions are more concerned with emphasis on market development strategies in comparison to the private institutions. This conclusion may result from the absence of private junior institutions in the study sample.

Test of H_{1b} revealed that there were not significant relationships or differences between an institution's size and amount of emphasis and value on Manpower/Market Strategies. Therefore, H_{1b} was rejected in this study. Stepwise multiple regression supported the same conclusion, that the relationships between the size of institutions and emphasis or value on MMS were nonsignificant.

Test of H_{1c} supported the conclusion that institutions experiencing negative deviation in enrollment differ in amount of emphasis and value they place on Manpower/Market Strategies compared to institutions with positive enrollment. The institutions experiencing negative deviation were more likely to place value on institutional adjustment to the needs

of the students. The results of multiple regression provided the same conclusion.

Test of H_{1d} revealed that there were no significant relationships or differences between the location of the institution and the amount of emphasis and value institutions place on Manpower/Market Strategies. Therefore, H_{1d} was rejected in this study.

Test of H_{1e} by discriminant function analysis revealed that variables senior/junior level accounted for the significant difference between these two groups. Stepwise multiple regression revealed that there was a significant relationship between the level of institution and the amount of emphasis and value they place on MMS. Therefore, H_{1e} was supported in this study. Senior institutions rated the institutional development strategies higher than did the junior colleges. Junior colleges were significantly different from senior institutions in use of demand assessment and market development strategies. Market development strategies deal with the expansion of the market to recruit students from different markets.

Test of H_{1f} concludes that there were no significant relationships or differences between the enrollment trend and amount of emphasis and value on Manpower/Market Strategies. Therefore, H_{1f} was rejected in this study.

Tests of H_2 through H_5 were conducted by using Pearson Product-Moment correlation. Test of H_2 revealed significant relationship between the amount of emphasis and value on demand assessment strategies and placement rates as perceived by administrators. Therefore, H_2 was supported in this study. Institutions placing more emphasis on surveys for market demand and utilizing market data to assess demand for graduates tend to have higher placement rates.

Test of H_3 revealed significant relationships between the amount of emphasis and value on institutional development strategies and attrition rates as perceived by administrators. Therefore, H_3 was supported in this study. It appears that expansion of the institutional lines of programs and adjustment of the programs to the needs of the job market may result in higher retention and attendance patterns in institutions of higher education, as perceived by administrators.

Test of H_4 led to rejection of the anticipated relationship between the amount of emphasis and value which institutions place on market analysis and the enrollment changes for women, ethnic minorities, and older students. Therefore, H_4 was not supported in this study.

Test of H_5 rejected the predicted relationships between market development strategies and enrollment trend. Therefore, H_5 was rejected in this study.

Explanation of Results

Although discriminant function analysis and regression analysis do not allow for the determination of causality, they are valuable tools for gauging relationships between (or among) variables and the drawing of predictive inferences. Therefore, the question of why certain relationships emerged, and the possible explanations, were considered.

It appears that private institutions were more serious in development of strategies for institutional development than public institutions. This is due to differences in the amount of value private institutions place on utilization of institutional development strategies.

In comparison with senior institutions, junior and community colleges' emphasis and value both were concentrated on development of the

market in order to attract more students.

Ratings on market analysis strategies were lower than other parts of MMS. This was more likely due to the junior colleges' unfamiliarity with or unwillingness to apply market segmentation and positioning strategies.

Korchenberg (1972) cited the necessity of understanding and utilizing a school's market "position":

In the process of developing differentiated programs for different markets, good marketing suggests that an organization also think in terms of seeking meaningfully distinctive advantages which set it apart from all other institutions offering similar programs. It should look for that mix of resources and program activities which will give it a special value in the eyes of its potential student body. (p. 369)

It is important, in an era of enrollment decline, for institutions to develop marketing strategies to improve or to capitalize upon their market positions. Equally important is the market segmentation analysis which helps institutions to identify the characteristics and needs of potential student populations of varying types.

The test of Hypotheses H_2 through H_5 with Pearson Product-Moment correlation revealed that job placement rate, retention, and attendance patterns in institutions of higher education can partly be influenced by institutional involvement in Manpower/Market Strategies. Although the anticipated relationships between MMS and enrollment trend was nonsignificant, and also given the fact that enrollment is declining and the use of MMS should bring changes in student enrollment status, it seems perfectly reasonable to argue possibilities of reverse causality.

A number of factors might have influenced the relationships found. For example, those institutions which have experienced enrollment decline may not consider it as a severe problem and therefore may not

place emphasis and value on Manpower/Market Strategies. Some institutions may place heavy emphasis and value on MMS and still experience no improvement in enrollment or placement rates due to factors like the economics of the area, migration, or demographic changes. This may cause relationships not to be shown in H_4 and H_5 , when in fact the relationships may be far more dramatic than were found. One can argue the other way, that those institutions which are experiencing enrollment decline may be those which are more likely interested in emphasizing MMS, whereas institutions with no problem in enrollment are not interested in MMS and still have high enrollment and placement rates. Therefore, the actual relationships may not be explained easily. In other words, due to the possible existence of reverse causality or inverse relationships, it was difficult to be certain about the identified relationships. Such reverse causality may occur in a majority of educational and social studies.

Conclusions

The study's purpose was to provide a broad perspective on the effect of enrollment decline and students' marketable skills on the development of strategies that institutions can select to cope with these problems.

Many administrators anticipated the trends now affecting education and took steps to maintain the vitality of their institutions. Others have moved aggressively to reshape their programs to better fit the market.

Many public community and junior colleges, for example, are rapidly restructuring their services to meet the needs of their markets. Others, such as private senior institutions, have placed their emphasis and value on institutional development strategies. In sum, the data

reveal that institutions may apply demand assessment strategies to bring up their placement rate and also by using the institutional development strategies they may be able to lower attrition rates and consequently have a higher enrollment. In addition, this study shows that value of manpower/market strategies dominates the views of administrators in different types of institutions.

Another purpose of this study was to examine the possible effects of selected institutional characteristics on ratings of Manpower/Market Strategies. The study shows greater positive impact of the control, level, and enrollment deviation of the institutions on the administrative decisions on implementation of the MMS than shown by location, size, and enrollment trend. The administrators of public institutions gave higher ratings to the survey of demand assessment and general market studies and lower ratings to the practical components of institutional development and market development. Program changes in modification of the liberal arts core and inclusion of various aspects of career preparation reported by private institutions were generally greater than those reported by public institutions.

The recent national trends in economics, birth rate, social structures, and legal and political developments as they impact enrollment in institutions of higher education have prompted, if not required, a great emphasis on developing a viable planning function to deal with declining enrollment, marketable skills, qualified students, and public and governmental support.

The results of the study show that there is a tendency to express concern about the need for education to assume responsibility for assisting students to enter and advance in the world of work. This was

realized in examination of the amount of emphasis and value they accorded to demand assessment strategies.

The most preferred strategies, it seems, will be those that provide students with programs and services for coping with the labor market and that reach out to students and apprise them of the availability and effectiveness of the programs.

These data indicate that policy initiatives dealing with truncated applicant pools and the tight labor market for college graduates bear fruit.

Implications

In the face of nearly certain declining enrollments, the data collected for this study support the thesis that Manpower/Market Strategies are highly effective in retarding enrollment decline and in promoting marketable skills of college graduates for public and private institutions. The heavy emphasis and value on implementation of market research and institutional adjustment to the needs of the labor market reveal the growth of attention to the implementation of MMS in institutions of higher education in the state of Texas.

This study supports Brazziel's (1978) view that principal strategies employed by administrators are those which deal with enrollment shifts and employability (job skills) of graduates. In addition, administrators are now more concerned about development of highly demanded programs, expansion of admission contacts, and expansion of efforts to master a new market.

Generalizations about types of institutions have to be qualified by the special circumstances surrounding each individual institution. In

agreement with Glenny (1976), this study also supports the conclusion that the more favorable position of public over private colleges will not necessarily continue in a time of enrollment decline and slow economic growth. Nevertheless, after analyzing enrollment trends, student attrition, and job placement rates, it should be concluded that policy initiatives can be developed to deal with truncated applicant pools, attrition rate, and tight labor markets.

Boulding (1974) and Astin (1975) suggested that the size of institutions affects decisions related to planning and change in higher education. This study found that the size of institutions has no effect on or relationship to the kinds of Manpower/Market Strategies institutions select. The Carnegie Foundation on the Advancement of Teaching (1975) in More Than Survival indicated that institutions located in urban areas may have benefits and advantages in enrollment over institutions located in rural areas. This study found that in response to Manpower/Market Strategy selection, the location of the institutions was not a critical factor.

The implications which may be drawn from this study, together with recommendations, are listed below.

1. The use of Manpower/Market Strategies (MMS) has great implications and possibilities for those colleges experiencing the dual pressures of enrollment decline and a low job placement rate. Institutions, for example, may apply demand assessment strategies to expand their knowledge about the market demand. This plan in the long run will affect the attendance of students. Institutions may benefit from conducting surveys to assess demand for their graduates. It

is recommended that utilization of data collected from the market should guide the development of proper career planning for the students and consequently may result in less frustration in finding a job.

2. The specific strategies or alternatives which should be adopted depend upon the strengths and attributes of each institution. However, this research suggests that any institution of higher education can readily identify its market and use that information to develop a strategic manpower/market plan.
3. As a consequence of the enrollment decline and the growing scarcity of resources, decision makers are becoming aware of the need to have alternative plans available. Information regarding enrollment trends, college-age youth, demographic data of population migration, and labor market needs permits decision makers to set priorities and to assess the status of a university and thereby make needed decisions regarding that institution's planning. For example, junior/community colleges need to place more emphasis on institutional development strategies as an aim of adjustment to the needs of the market.
4. From an administrative standpoint, there are two general strategies possible for higher placement

and lower attrition rates. First, an institution might endeavor to enhance the product offering through an understanding of demand assessment strategies. If successful, this approach might increase an institution's knowledge about its market demand and help it to adjust to the needs of the market. This probably will increase the opportunities for jobs for graduates. Second, an institution might increase the program offering through development of new highly demanded programs. This would be implemented best by institutional development strategies, which would call for an increase in the number of programs offered. Such a development would likely increase the retention and attendance patterns of students and consequently result in higher enrollment. In addition, institutional development strategies could provide a basis to allow for upgrading of programs, and this plan would signal to the market place a better position. According to Shaffer (1978), this could lead to future enrollment increase. Therefore, such strategy deserves consideration by administrators and planners of higher education.

5. A new or rededicated management perspective by the administrators of institutions in decline seems critical. Management skills in marketing, market segmentation, market positioning, student assessment

and involvement, long-range institutional development planning, salesmanship, and use of technology, including computers as management tools, are required.

6. Those in higher education who ignore MMS considerations are more likely to compound the enrollment losses of the 1980's by failure to adjust to the changing educational environment, career expectations, and the job market.

Recommendations for Further Research

As a result of this study, the following recommendations have been developed.

This appears to be one of the first comprehensive studies on a state-wide basis to identify administrative strategies employed by institutions experiencing declining enrollment. At the time of the study, the problem was just emerging. Detailed follow-up on institutions which have taken action to deal with the problem could yield additional information and substantiate or refute the conclusions of this study.

The study should be expanded to include subjects from states other than Texas. Different institutional characteristics such as institutional affluence and selectivity of students should be utilized to test the effects of wealth and admission standards on implementation of MMS.

Institutional enrollment patterns might be studied to ascertain the impact of marketing and manpower programs on the quality of an institution's students. Do marketing activities attract more and better students? Do marketing activities recruit more traditional students or new types of students? Do labor market data enable the institutions to do a better job

in adjusting to the needs of the market?

Further research should be conducted to determine more recent alternatives that administrators may identify to cope with the enrollment problem and job placement. A comparison should be made between successful institutions (growth) and less advantaged institutions (decline) to predict the best courses of action available.

In addition to weak job markets for college graduates, other factors may depress enrollment even more than suggested by most projections (inflation, recession, military recruitment). A study which predicts the effects of these factors on enrollment trends would be helpful for institutions of higher education in the 1980's.

Training or leadership programs for administrators at the postsecondary education level should be reviewed to ensure inclusion of specific training needed to cope with the problem of declining enrollment, marketable skills, and enrollment projections. Case studies should be conducted to determine specific administrative training functions, including marketing approaches, manpower requirements, and long-range planning. Then, the effects of these functions on enrollment trends and job placement should be studied.

Finally, computer-based market information systems could be studied to ascertain the impact of such systems on manpower and marketing strategies implementation and also on enrollment trends.

As a result of steady-state or declining enrollment patterns, it is important that institutions be afforded a proper environment to grow and diversity as the market requires. Administrators of public junior colleges in the state of Texas might carefully review their current planning programs, paying careful attention to MMS so as to ascertain the

most effective avenues of improvement. Since MMS of different institutions may vary, it is suggested that the review of MMS be done at the individual campus level.

There is no question that manpower and market approaches in American postsecondary education are growing in scope, sophistication, applicability, and influence. Yet they remain imperfect, so they must be used with great attention to their inherent limitations and to the nature of decision-making in higher education. The coming years will demand greater care in the application of MMS to postsecondary education, and the penalties for mistaken conclusions promise to be heavy.

The moment has come when higher education systems must recognize that they are in an era of general slow economic growth and fewer college-age youth. The MMS implementation may make a better market position for the institution; this can be achieved only if questions are asked correctly--not how the institution can survive, but how best can it provide a student population with the educational services which will assist and motivate them to become functionally integrative in a college educational system. To this end, the MMS approach is concerned with developing a college's educational strength so that the program will by itself attract student support.

As a consequence of labor market circumstances, as well as student interest, higher education in the years ahead undoubtedly will seek a greater integration of educational and work experience. This thrust will result from two forces. One will be the need to be informed about the job skills desired by the labor market. The college or university that eschews a concern for job competence in its instructional programs may well find fewer students to instruct. A second force will be higher

education's need to demonstrate that its programs are relevant to job experience if it is to recruit and instruct larger numbers of persons who have already entered the labor market.

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APPENDIXES

APPENDIX A

Cover Letter



University of Houston

Central Campus

Houston, Texas 77004

Administration and Supervision

College of Education

June 2, 1980

Dear Administrator:

Declining enrollment can create extreme pressures on colleges and universities which in some cases threaten the continued existence of these institutions. As one possible solution to the enrollment problem and improvement of the employability of graduates, many colleges and universities have begun to turn to manpower/market planning approaches and techniques to assist them in coping with or understanding the problem.

I am undertaking a study to examine the use of manpower/market strategies in different types of institutions in the State of Texas. The result of this research should be both theoretical and practical value to administrators and policy makers.

Information on your institutional responses will be strictly confidential and no data will be individually reported for any institutions. The report will be in summary form only.

I realize that completing this survey form requires the commitment of a few minutes of your time, and therefore would like to thank you in advance for anticipated participation. Please return the questionnaire in the enclosed post-paid envelope.

If you have any questions, please call me at the University of Houston Central Campus, Monday through Friday, from 8:30 a.m. to 1 p.m. at

Sincerely,

Michael T. Herian

Attachment.

Note: This study has been reviewed by the University of Houston Central Campus Committee for the Protection of Human Subjects

APPENDIX B
Survey Questionnaire

Part I

ADMINISTRATIVE ALTERNATIVES TO DECLINING
HIGHER EDUCATION ENROLLMENT

Subject # _____

SURVEY OF COLLEGE MANPOWER/MARKET PLANNING AND DEVELOPMENT ACTIVITIES

Directions: Please indicate the amount of emphasis your institution placed on various Manpower/Market Planning activities in the last five years by circling the appropriate number in the left column which is titled Component Emphasis. Please indicate similar fashion the actual value you attach to these activities in the right column which is titled Component Value. The ratings range on a continuum of 1 - 7.

<u>Component in Planning and Development</u>		<u>Component Emphasis</u>						<u>Component Value</u>								
		Little Emphasis				Some Emphasis		Heavy Emphasis				Little Value		Some Value		High Value
<u>Demand Assessment</u>																
1.	Conducting surveys to assess demand for our graduate of various programs in local region.....	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
2.	Conducting surveys to assess demand for graduates of various programs in state.....	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
3.	Utilizing Federal publications (data) (e.g., <u>Bureau of Labor Statistics's Occupational Handbook</u>) to assess national demand for graduates of various programs.....	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
4.	Utilizing other market data to assess demand for graduates. Please list _____	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
5.	Establishing career counseling and development centers to assist students to assess market demand and plan their majors and careers.....	1	2	3	4	5	6	7	1	2	3	4	5	6	7	

Components in Planning and Development

Institutional Development

Components in Planning and Development							Component Emphasis							Component Value						
							Little Emphasis			Some Emphasis			Heavy emphasis	Little Value			Some Value			High Value
<u>Institutional Development</u>																				
6. Conducting placement studies to ascertain rates and patterns of placement of graduates.....							1	2	3	4	5	6	7	1	2	3	4	5	6	7
7. Initiating programs in the health professions to meet demand.....							1	2	3	4	5	6	7	1	2	3	4	5	6	7
8. Initiating programs in business administration to meet demand.....							1	2	3	4	5	6	7	1	2	3	4	5	6	7
9. Initiating discussions with faculty on dynamics and value of planning to better equip students for the labor market.....							1	2	3	4	5	6	7	1	2	3	4	5	6	7
10. Initiating discussions with staff on dynamics and value of planning to better equip students for labor market.....							1	2	3	4	5	6	7	1	2	3	4	5	6	7
11. Expanding operations of the placement office.....							1	2	3	4	5	6	7	1	2	3	4	5	6	7
12. Expanding opportunities for internship for students.....							1	2	3	4	5	6	7	1	2	3	4	5	6	7
13. Survey corporations and agencies to ascertain skills and traits needed for liberal arts graduates to succeed in corporations and agencies.....							1	2	3	4	5	6	7	1	2	3	4	5	6	7

Market Analyses

- ## Market Development

- [illegible]

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DEMOGRAPHIC DATA

Part II

1. The name of your institution _____
2. Enrollment in your institution (Fall 1979)
 Headcount _____
 Full-time equivalent
 (Divide total SCH by 15) _____
3. Your institution is located in:
 - a. Urban area
 - b. Suburban
 - c. Rural
4. Your institution level is:
 - a. Public senior college or university
 - b. Independent senior college or university
 - c. Public community junior college
 - d. Independent junior college

Part III

In responding to this part, please characterize in your best judgement, the nature of various changes that have taken place at your campus from 1975 to the present. Please do not take the time to look up hard data. Check the one alternative for each item that best describes your perception of the situation.

- From 1975 to 1979
- | | increased
more
than
10% | +
abt
5% | No
or
little
change | -
abt
5% | Decreased
more
than
10% |
|--|----------------------------------|----------------|------------------------------|----------------|----------------------------------|
| 5. Indicate the extent of increase or decrease in total fall enrollment (undergraduate, graduate, day, evening, full-time) by: | | | | | |
| Headcount..... | _____ | _____ | _____ | _____ | _____ |
| Full-time equivalent..... | _____ | _____ | _____ | _____ | _____ |

6. Mark the one alternative from below which best describes the relationship between current actual enrollment and enrollment projected in the late seventies (e.g., Coordinating Board's 1978 projections).
 - a. Actual enrollment equaled or exceeded the projection.
 - b. Actual enrollment fell short of projection by 0-5%.
 - c. Actual enrollment fell short of projection more than 5%.
 - d. No projection made in the late seventies.

7. Considering all current institutional problems, how would you rate the problem created by the enrollment/enrollment decline in your institution?

Not a problem			Moderate problem			Major problem		
1	2	3	4	5	6	7		

8. For each of the five time periods listed, please indicate the amount of emphasis that your institution placed on the use of manpower/market strategies. (circle please)

	No Emphasis			Some Emphasis			Heavy Emphasis		
	1	2	3	4	5	6	7		
a. Before 1973.....	1	2	3	4	5	6	7		
b. 1973 - 1974.....	1	2	3	4	5	6	7		
c. 1975 - 1976.....	1	2	3	4	5	6	7		
d. 1977 - 1978.....	1	2	3	4	5	6	7		
e. 1979 - 1980.....	1	2	3	4	5	6	7		

9. Indicate the extent of increase or decrease in each type of student in your institution (1975-79). (Please check)

	1979 compared to 1975				
	Increased more than 10%	+ abt 5%	No or little change	- abt 5%	Decreased more than 10%
Women.....	_____	_____	_____	_____	_____
Minorities.....	_____	_____	_____	_____	_____
Older.....	_____	_____	_____	_____	_____

10. Based on your own knowledge or impression indicate the rate of change in job placement (placement in field related to major and/or employability) for your institution's graduates:

	Decreased considerably		No Change			Increased considerably	
	1	2	3	4	5	6	7
1979 compared to 1975.....							

11. Indicate the extent of change in retention and attendance patterns in your institution.

	1979 compared to 1975		
	Increased more than 5%	No or little change	Decreased more than 5%
Stopout.....	_____	_____	_____
Dropout.....	_____	_____	_____
Transfer to other college.....	_____	_____	_____

Please return questionnaire to:

Michael T. Herian
c/o Dr. Gene Atkinson
401 Farish Hall College of Education
University of Houston Central Campus
Houston Texas 77004

APPENDIX C
Follow-up Letter



University of Houston

Central Campus
Houston, Texas 77004

Administration and Supervision
College of Education

June 16, 1980

Dear Administrator:

On June 2 I sent you a questionnaire as part of survey of manpower/market activities and planning to declining enrollment in higher education.

As yet, however, I have not heard from you. I realize that the questionnaire may have arrived at a difficult time, but I am hopeful that you might now be able to complete and return it. In the event you may have misplaced the earlier one, I am taking the liberty of enclosing another for your use.

I think you will find the questionnaire interesting to answer, and I have sought to keep it relatively brief so that it will take only a short time to complete. Some questions, of course, may not be equally applicable to all types of institutions. Nonetheless, please answer all of the items as well as you can and return the questionnaire via the enclosed self-addressed, stamped envelope.

I realize that this will take a few moments of your time and would like to thank you for your anticipated participation and effort.

Information on your institutional responses will be strictly confidential and the data will be reported in the summary form only.

If you have any questions, please call me at the University of Houston Central Campus, Monday through Friday, from 8:30 a.m. to 1 p.m. at

Respectfully Yours,

Michael T. Herian

Attachment.

Note: This study has been reviewed by the University of Houston Central Campus Committee for the Protection of Human Subjects.

APPENDIX D

Texas Institutions of Higher Education Represented in the Study

SELECTED SENIOR COLLEGES AND UNIVERSITIES

Abilene Christian University
Angelo State University
Austin College
Baylor University
Bishop College
Corpus Christi State University
Dallas Baptist College
East Texas State University
Hardin-Simmons University
Houston Baptist University
Howard Payne University
Huston-Tillotson College
Incarnate Word College
Lamar University Central Campus
Lamar University at Orange
Lamar University at Port Arthur
Laredo State University
Lubbock Christian College
McMurry College
Midwestern State University
Moody College
North Texas State University
Our Lady of the Lake University
Pan American University
Pan American University at Brownsville
Prairie View A&M University
Rice University
Saint Edward's University
Saint Mary's University of San Antonio
Sam Houston State University
Southern Methodist University
Southwestern University
Southwest Texas State University
Stephen F. Austin State University
Sul Ross State University
Tarleton State University
Texas A&I University at Kingsville
Texas A&M University Main Campus
Texas Christian University
Texas College
Texas Lutheran College
Texas Southern University
Texas Tech University
Texas Wesleyan College
Texas Woman's University
Trinity University
University of Dallas

University of Houston Central Campus
University of Houston at Clear Lake City
University of Houston Downtown College
University of Houston Victoria Campus
University of Mary Hardin-Baylor
The University of Texas at Arlington
The University of Texas at Austin
The University of Texas at Dallas
The University of Texas at El Paso
The University of Texas at Permian Basin
The University of Texas at San Antonio
The University of Texas at Tyler
West Texas State University
Wayland Baptist College
Wiley College

SELECTED JUNIOR AND COMMUNITY COLLEGES

Alvin Community College
Amarillo College
Angelina College
Austin Community College
Bee County College
Blinn College
Brazosport College
Brookhaven College
Cedar Valley College
Central Texas College
Cisco Junior College
Clarendon College
College of the Mainland
Cook County College
Del Mar College
Eastfield College
El Centro College
El Paso Community College Rio Grande Campus
El Paso Community College Trans-Mountain Campus
El Paso Community College Valley Verde Campus
Franks Phillips College
Galveston College
Grayson County College
Henderson County Junior College
Hill Junior College
Houston Community College
Howard College at Big Spring
Kilgore College
Laredo Junior College
Lee College
McLennan Community College
Midland College
Mountain View College

Navarro College
North Harris County College
Odessa College
Panola Junior College
Paris Junior College
Ranger Junior College
Richland College
Saint Phillip's College
San Antonio College
San Jacinto College Central Campus
San Jacinto College North Campus
South Plains College
Southwest Texas Junior College
Tarrant County Junior College Northeast Campus
Tarrant County Junior College Northwest Campus
Tarrant County Junior College South Campus
Temple Junior College
Texarkana Community College
Texas Southmost College
Tyler Junior College
Vernon Regional Junior College
Victoria College
Western Texas College
Weatherford College
Wharton County Junior College